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Railway Age

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Passengers alighting from Timken Bearing Equipped streamliner "Hiawatha". Photograph courtesy Milwaukee Road.

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RAILWAY AGE

The Interest of Railroad Men In the Political Campaign

Probably it is not wise for officers of corporations, **as such,** to engage in political activities. There is nothing unethical in such action. Leaders of labor unions, as such, certainly engage in political activity, as do ministers of religion and heads of colleges and of farmers' organizations. But when the head of an organization engaged in the production of useful articles and services embarks upon political activity to protect the enterprise entrusted to his keeping, usually a howl goes up. Such is the degree to which the honorable function of supplying the people with useful articles and services has been relegated to the dog-house.

Business Can Never Thrive Until Present Policies Are Abandoned

Unfortunate and unfair though this situation may be, it nevertheless is a fact—and practical men are governed by facts, not by things as they ought to be. But if officers of corporations, as such, are warned by popular prejudice from engaging in political activity, certainly there is nothing to prevent their so engaging as private individuals. We believe it to be demonstrable that the continued prevalence of private enterprise in this country will become impossible if present New Deal policies regarding business are continued. If that demonstration can be made, then morality as well as good sense requires that believers in private enterprise resort to vigorous political action in its defense.

Private enterprise in this country is seriously ill. New Dealers and anti-New Dealers see eye to eye on that one point, if on no other—although, of course, the New Dealers are not emphasizing the point just at present. Where the argument arises is over the cause of the illness and its cure. Is the malady due to internal distemper and old age (as the New Dealers claim) or is the victim being poisoned to death? If the New Dealers are right in their diagnosis, they are very wise to start developing a new system of production and distribution, gradually to take the place of private enterprise as it withers away. On the other hand, if the opponents of the New Deal are right, and the principal thing wrong with private enterprise is the political poison being administered by the New Deal, the thing to do is to shut off the poison and let the sufferer quickly recover.

First let us look at the patient to see just how badly off he is. The best measure of the effectiveness of our economic system is **national income per capita, qualified by changes in the cost of living.** Total national income alone does not tell the story, because it does not take into account either the number of mouths to feed, or the potential number of producers. And per capita income figures alone do not provide a true comparison because they are affected by changes in the value of money. But when we see a figure of $681 as the per capita income for 1929, adjusted by cost of living, and a figure of $500 as the per capita income for 1932, also adjusted for the cost of living, we know that the average American was able to command only 500/681, or 73 per cent, as much food, clothing, housing and other necessities and luxuries in 1932 as in 1929. Figures of national income per capita adjusted by the cost of living, as compiled by the National Industrial Conference Board, are given in the accompanying table.

America's Standard of Living Declines—After 100 Years of Steady Increase

From this table it can be readily computed that the goods and services available to the average American, valued in constant dollars, averaged $617 worth annually in the seven years 1926-32, prior to the New Deal, and only $577 worth annually during the past seven years, 1933-39 under the New Deal. The average American, in other words, has been 7 per cent worse off during seven years under the New Deal—not in paper dollars, but in actual goods and services—than he was in the seven years prior to the New Deal, although they included three years of the depression. But this does not measure the full loss because, **instead of decreasing, the per capita income ought to have**

increased. Judged by past experience (from 1900 to 1929) the per capita income (still allowing for changes in cost of living) ought to rise 9 per cent in seven years—but instead of that, under the New Deal, it declined 7 per cent in seven years—making a net difference between what it actually was and what it should have become of 17 per cent.

Realized National Income Per Capita, Adjusted by the Cost of Living

Year	Income Per Capita	Year	Income Per Capita	Year	Income Per Capita	Year	Income Per Capita
1900	$480	1910	$575	1920	$567	1930	$634
1901	488	1911	565	1921	534	1931	580
1902	501	1912	549	1922	557	1932	500
1903	498	1913	589	1923	614	1933	495
1904	506	1914	565	1924	610	1934	535
1905	529	1915	576	1925	614	1935	557
1906	543	1916	627	1926	631	1936	625
1907	531	1917	642	1927	640	1937	633
1908	524	1918	646	1928	656	1938	580
1909	580	1919	620	1929	681	1939	617

Figures are from National Industrial Conference Board except for 1939 which is our own rough estimate.

These figures do not tell the whole story of the malady of **private** enterprise, though, because they include income derived from government as well as from private business; and a constantly rising proportion of national income in recent years has come from government. The proportion rose from 8.6 per cent of total income in 1929 to 19.5 per cent in 1938. If the governmental contributions to national income are deducted from the figures of per capita income given in the preceding paragraph, it will be seen that the contribution of private enterprise to the goods and services available to the American people has declined relatively much more within recent years than incomes themselves. In other words, total average production per capita by private enterprise has declined, while production by government (i. e., socialism) has rapidly increased.

New Investment (the Best Job-Maker) Has Fallen Off 80 Per Cent

The sad state of private enterprise is further indicated by, and is largely due to, the decline in new investment money going into it. From the end of the World War up to the advent of the New Deal, an average of 292 million dollars of **new** capital per **month** poured from the savings of the people into expanding the plant, the jobs and the products of American industry. Under seven years of the New Deal **new** capital going from the savings of the people to expand the plant, the employment and production of American industry has averaged only 52 million dollars per month—**less than one-fifth the rate of expansion which went on prior to the "more abundant life."**

Many additional facts could be adduced further to show the declining health of private enterprise and the failure of the economic well-being of the average American to improve—accompanied by a rapid rise in the public debt, chronic unemployment of huge proportions and the steadily growing importance of government as an employer of labor. We shall not here cite any further such facts, however, because nobody seriously disputes them. The question is: Has the decline of private enterprise been due to inherent causes (as New Dealers contend) or has it been due, as the anti-New Dealers allege, to the economic policies of the New Deal?

The entire experience of the country plainly indicates that it has been due to the policies of the New Deal. It is true we had the stock market panic in 1929 and depression in 1931-1932 before the New Deal began; but we repeatedly had similar panics and depressions before and speedily recovered from them and advanced to new heights of national income and prosperity. Is it merely a coincidence that the first failure of American private enterprise to cause speedy recovery has occurred under New Deal policies hampering private enterprise with unprecedented government regulation and taxation? Or is it not much more logical to conclude that the failure of recovery is the inevitable and obvious effect of New Deal policies?

Private Enterprise Ought to Be Given a *Chance* to Prove Itself

One way, **and the only way,** to determine whether this is the case is to turn the New Deal out and see whether private enterprise revives or not. If the New Deal and its policies of taxing and regulating private enterprise are ousted and business does not rapidly recover, then the American people will have reason to believe the New Dealers were right—that it was not New Deal policies, but something inherently wrong with private enterprise, that was preventing recovery. On the other hand, if, as we sincerely believe, the main thing wrong with private enterprise is government policies preventing it from functioning normally, then turning out the present political crowd will be followed by an improvement in business demonstrating that the anti-New Dealers are right.

If however the New Deal is left in power, private enterprise will probably continue its decline, and finally die and nobody will know for sure until it is too late whether it was killed by a naturally-developing cancer or New Deal poisoning. Even those who believe the New Deal diagnosis is correct ought, therefore, if they love their country, to want to give the advocates of private enterprise one more chance to create a revival before the historic American system is completely scrapped—hence they too should support a change in administration for at least one term.

The New Dealers aren't saying much just now about the dirges they have written for private enterprise and their plans constantly to expand socialistic ventures to take its place. But their economic lyricists were busy on the funeral songs not many months ago, and, no doubt now, behind the scenes, are practicing up on them, all ready to break out in a loud chorus on the

day after election, if they win. Adolph Berle, assistant secretary of state and one of the original "brain trust," has time and again put forth his theories on private enterprise having bogged down and has urged, if we are to keep employment going, that we must greatly increase our non-profit government "investment." Stuart Chase, a popular writer on economic subjects and also very close to the New Deal, is carrying on propaganda for the same viewpoint. Other economic left-wingers close to the top of the government have frequently expressed similar views. Meantime, the constant expansion of government "investment" goes on—hundreds of millions of dollars being poured into transportation, into housing and hundreds of other such projects.

Increasing Government "Investment" a Sure Road to State Socialism

Often such so-called "investment" by the government comes into direct competition with private enterprise (as, for instance, superhighways and waterways with the privately-financed railways). In such cases, government "investment" cannot be excused as a necessary substitute "because private investment has failed," since the government investment is the **cause** of the very condition it claims to be substituting for. That is to say, no investor is going to put his money into a railroad which must try to collect from the traffic which uses it, when the railroad is going to be paralleled by a waterway or superhighway whose traffic pays nothing.

But government "investment" discourages, not only the private businesses with which it directly competes, but all other private business as well, because private business has to finance government "investment" out of taxation. That is, while heavy "investment" in schools, hospitals and parks does not take customers away from private business, it does add to the tax load of private business and, at the same time, it constantly **adds to the proportion of total property which is not on the tax lists.** If $1,000,000 is invested by private enterprise in a factory, such investment encourages other private enterprise by increasing the amount of property over which the tax load is spread. But if $1,000,000 is "invested" by the government in a toll-free bridge, private enterprise is handicapped because (1) it has eventually to pay that $1,000,000 in additional taxes and (2) because the $1,000,000, being invested in government property, is permanently removed from the tax rolls.

The excessive government "investment" being carried on by the New Deal—and which those in its inner councils propose greatly to increase—will, if it is continued for four more years, cause private industry further to shrink and socialized enterprise greatly to expand, even if not one single further restrictive regulatory law against private enterprise is enacted. It is much easier to spread socialization through the medium of federal appropriations than by direct legislation, because private business will always fight against restrictive legislation. When appropriations are involved, however, there are always some businesses which stand to make an immediate profit from them; and, hence, they support such appropriations rather than oppose them. The socializers have learned the technique of dividing the opposition, and, if they are returned to power, will undoubtedly use it on a larger scale than ever before.

What Will Mr. Roosevelt Consider His "Mandate" to Be if He Is Re-elected?

Private enterprise will have no opportunity to revive under the New Deal and the New Dealers themselves have admitted it—guardedly to be sure, but admitted it nevertheless. It is a matter of history that Mr. Roosevelt took his 1936 victory as a "mandate" to do numerous things—among others, to attack and attempt to establish his dominance over the United States Supreme Court, although the court issue actually never was mentioned in the 1936 campaign. If 1936 gave him a "mandate" to pack the Supreme Court, what under the sun will he **not** have a mandate to do if he is elected this year for a third term? Will he not reasonably conclude that the people are so convinced of his indispensability and the correctness of his policies of attacking private enterprise that henceforth no institution or tradition must be allowed to stand in his way? Will not Adolph Berle's dirge for private enterprise likely become the national anthem?

That, anyhow, is how it looks to us. And if the situation is as serious for private enterprise as we sincerely believe it to be—then any adherent of the American tradition who doesn't roll up his sleeves and get into this campaign with all he has will deserve the regime of state socialism for which we are headed. **The railroad business—no matter how well it manages its own affairs—cannot make a decent living for its owners or its employees as long as business in general is bad.** The managerial quality in the railroad business was certainly not of any lower order in 1939 than it was in 1929. Yet in 1929 the railroads gave employment to 1,661,000 men and paid them 2 billion 900 million dollars, while in 1939 they gave employment to only 988,000 and paid them only 1 billion 900 million. In 1929 they earned 1 billion 275 million net operating income and in 1939 only 589 million. The differences were due principally to differences in general economic conditions; and these, in turn, were due mainly to government policies that unnecessarily protracted the depression. Therefore, if railroad men can do anything in a political way to insure the retirement of the politicians whose policies have so long and greatly curtailed the national income—which is the source of all railroad traffic, railroad income and railroad employment—they will be acting quite as much in the interest of their industry (and their country) as if

they put forth the same effort at their regular callings. More so, in fact, because their regular callings, as employees of a **private** industry, may not long exist if present political policies continue.

Equipment Buying Accelerated in August

Railroad equipment purchasing programs disregarded the usual summer doldrums in August and placed more orders on builders' books for locomotives than in any single month since April, 1937; more freight car orders than in any month since November, 1939, and the greatest passenger-train car total since December, 1939. The individual figures for the month comprise orders for 65 locomotives (30 steam and 35 Diesel-electric), 7,645 freight cars and 102 passenger-train cars, which contrast strikingly with the 5 locomotives, 315 freight cars and no passenger-train cars at all booked in August, 1939.

As things stood at the close of August, locomotives ordered since the beginning of the year totaled 301 units, or 87 per cent in excess of those ordered in the corresponding eight months of 1939, while the freight car total of 24,076 cars was more than 2½ times that of the comparable period of last year, exceeding it by 156 per cent. Only in the passenger car category is the comparison unfavorable to 1940, its total of 161 units falling short of last year's eight months' record of 174, for which sluggish buying in this field in previous months of this year is responsible. In August itself some 72 per cent more passenger units were ordered than in all the previous seven months of this year combined.

Who's Vulnerable and Why

Transportation facilities have probably almost trebled since 1920, while the total available traffic is less. Self-preservation of the transportation industry as well as of the shipping public requires that the less economical part of the surplus be eliminated. Rail facilities are being contracted but motor transport facilities continue to grow.

The motor carriers, in their efforts to recover from growing pains, seized on the Blue Eagle. When the Supreme Court winged that misbegotten bird, these carriers were nevertheless convinced of the wisdom of regulation for their business. They petitioned Congress in favor of it and expressed their desire "to preserve for the public the *economies* and flexibility of motor transportation."

Shortly after the Motor Carrier Act was approved in 1935, the industry told the public it intended to revise its rate structure to conform to its assurances to Congress. Alas, however, expediency got the upper hand of nobler motives. Some of the motor carriers were making more money by "picking-and-choosing" at rail rates, and their interests seem to have largely prevailed—in any event *can anyone contend that truck rates have been made to reflect the "economies of motor transportation?"*

Informed shippers throughout the country continuously warned the motor carriers that the policy of making their rates only as a "pick-and-choose" appendage to the railroad rate structure could only lead to unsound expansion and place the motor carriers in a highly vulnerable position. But the get-it-while-the-getting-is-good policy won out. The warnings of shippers were ignored; and considerable regulatory support was secured in hitching the truck industry to the rail rate structure. All of this caused the trucks to mushroom more than 40 per cent.

One needs only to examine annual statements of principal trucking concerns from year to year to realize the extent of their expansion. For example, the net book investment of one company has increased nine or ten-fold since 1930, more than half of this since regulation. Liberal salaries paid to its officers add greatly to this pleasing bonanza. Now prospects for increased business are felt to be so good that this company contemplates a stock sale to secure new capital to provide the necessary equipment for further traffic expansion. It is not usual to find such a Comstock lode in a truly competitive business where the opportunity to discriminate in the selection of traffic does not exist. The railroad rate structure does not reflect the economies of motor transportation nor describe the sound radius of truck operation.

Quite naturally, truck labor has also realized the value of organization, and this, with increases in other costs, is causing truck expense to grow in greater proportion than revenue. For example, net operating revenue was 17.5 per cent less for the first quarter, 1940, than for the same period in 1939, notwithstanding total operating revenues increased 15.6 per cent, tons handled increased 20.6 per cent and truck-miles increased 18.4 per cent. These figures also suggest that the trucks are dipping down into the lower strata of traffic.

But now the railroads are beginning to realize more fully upon their long-felt conviction that their rate structure must be basically revised to meet changed conditions; and the Southern rail carriers are even now readjusting several thousand ratings in their classification. **Generally speaking, these ratings are not being reduced to the extent recommended by the Federal Co-ordinator of Transportation in his Merchandise Traffic Report. Hence, it is evident that they do not constitute unsound reductions, nor are they a "rate war."**

It is unfortunate that the desire for fancy (and purely artificial) profits, and lack of statesmanlike judgment, in the motor transport industry during its formative period has placed it in its present vulnerable position. But the public should not be required to continue to pay for a continually growing surplusage of uneconomical transportation facilities. Furthermore, it isn't going to pay for it. Transportation is a buyers' market and nobody ever prospered yet, for a very long period, by ignoring the conditions under which he has to conduct his business.

Union Pacific Builds Large Water Softening Plant

Supply taken from Missouri river through city of Council Bluffs, Iowa, is high in scale-forming solids, but is treated successfully at the rate of 60,000 gal. an hour

The New Water Treating Plant at Council Bluffs, Ia., Showing the 500,000 Gal. Storage Tank in the Foreground, and the Settling Tank and Chemical House Beyond

WITHIN the memory of many men who are still in active service, the value of a locomotive water supply was measured largely by its dependability, and this characteristic is still as important today as it ever was. On the other hand, larger locomotives, higher train speeds, longer locomotive runs and the demand for rigid adherence to schedules have so increased the importance of the quality of the water delivered to locomotives that today this item is given substantially the same weight as dependability. For a number of years the Union Pacific has been outstanding in its efforts to provide not only dependable supplies, but water that is also satisfactory in every respect for locomotive-boiler use.

In this long-term program of improving its water supplies, many water stations have been rebuilt in whole or in part, enlarged or provided with improved water-softening equipment to insure water of better quality. One of the stations to receive attention is that at Union Pacific Transfer, Council Bluffs, Iowa. This is a junction point for most of the roads operating passenger trains into Omaha from the east, and a freight-interchange point for all of the roads running east from Omaha. In connection with the interchange of freight with these eastern roads, the Union Pacific maintains receiving, classification and forwarding facilities and an engine terminal.

For a number of years, water for use at this terminal has been purchased from the city and softened by the railway. The capacity of the existing plant had been outgrown, however, and the water-treating equipment was not modern, for which reason the entire plant was rebuilt to provide a treating capacity of 60,000 gal. an hour, the only facility retained from the existing plant being the storage tank and an 8-in. connection to the city main.

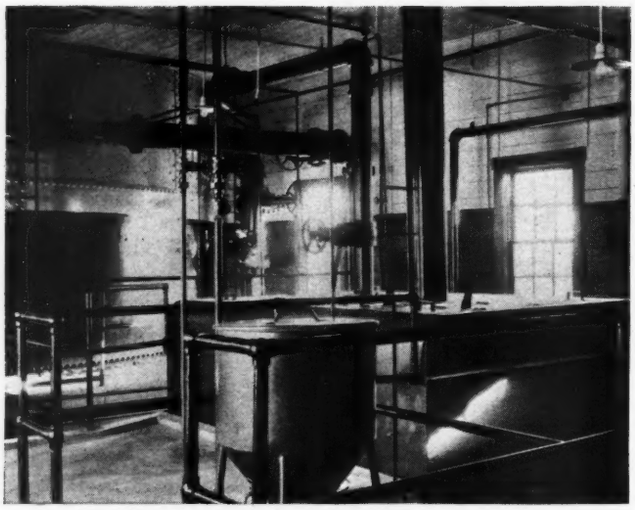
Water Is Hard

The city obtains its supply from the Missouri river. In addition to being quite hard, the raw water from the river carries a considerable load of solids in suspension. Both the hardness and the turbidity vary considerably, with the season, for the flow in the river fluctuates between relatively wide extremes. During high stages the amount of suspended matter is at the maximum, while the dissolved solids reach their maximum concentration as the river approaches its minimum flow in midwinter.

The city clarifies the water and filters it, to make it satisfactory from a sanitary standpoint, but obviously this does not reduce its hardness and make it satisfactory for locomotive-boiler purposes. For this reason, the railway has found it necessary to maintain water-softening facilities at this water station. Owing to the gradually increasing consumption of water, and the consequent necessity for increasing the capacity of the plant, as well as a desire to maintain closer control over the treated water, it was decided to retire the existing water-softening facilities and replace them with more modern as well as larger capacity equipment.

As the new plant was constructed, it consists of a 500,000 gal. steel storage and delivery tank of the standpipe type, 47 ft. by 69 ft., this being retained from the old plant; a new steel settling tank 35 ft. by 72 ft.; a new frame building on concrete foundations, 30 ft. by 70 ft. in plan, which houses the chemical storage and the chemical pumping and treating equipment. In addition, minor changes were made in the underground distribution system and a new 12-in. cast-iron supply line, approximately 3,000 ft. long, was laid to a connection with the city water main on Sixteenth street. The total capacity of the storage tank is about 890,000 gal. but the effective storage is reduced by the fact that the lower 20 ft. is not available for consumption, while the float switch at the top reduces the height to which the tank can be filled.

This plant is designed for softening the water by the

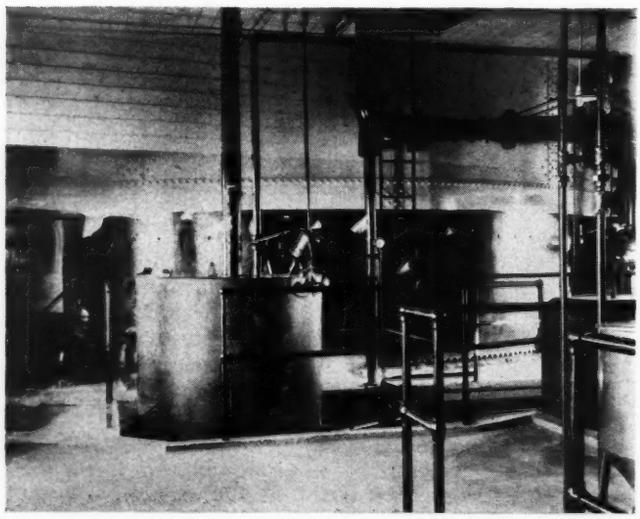


Chemical Mixing Tank, with the Sodium Aluminate Proportioner in the Foreground

lime-soda process, but this treatment is reinforced by the addition of sodium aluminate. Ample storage is provided for the chemicals used in the process. The chemical-storage room and the mixing room are separated by a partition, access from one to the other being through a sliding door. The floor of the storage room is at car-floor height to facilitate the handling of the bags of chemicals as they are unloaded. The floor of the mixing room is at the same level and the mixing tank is placed in a pit to avoid the necessity for lifting the packages when charging the mixer. A floor scale is located in the mixing room immediately in front of the door leading to the storage space. The sodium aluminate proportioners are on the floor of the mixing room adjacent to the mixing tank, and the lime-soda ash proportioning and feeding equipment are located in the pit with the mixing tank.

A new steel settling tank, 35 ft. in diameter and 72 ft. high, was erected in connection with the replacement of the plant. The downcomer pipe is 10 ft. in diameter to a point 21 ft. above the bottom of the tank, from which point it increases in diameter to 22 ft. 6 in. at a height of 5 ft. above the floor. As the treated water rises in the tank, it passes through an excelsior filter and overflows into the storage tank. The sludge settles to the bottom of the tank and is removed by drawing off water and sludge through a connected system of perforated pipes and quick opening valves. The sludge is removed twice each day.

The plant is located on the shore of a large natural sump or pond. The effluent from the sludge-disposal system is drained directly into this pond, thus eliminating one of the troublesome problems so often connected with water treatment.



Within the Chemical Mixing Room, Showing the Nalco Wet Feeder for Anti-Corrosion Solution

Plant is Operated Electrically

Water is received from the city through a 12-in. water main, under sufficient pressure to discharge into the top of the settling tank without booster pumps. There is an electrically-operated gate valve in the 12-in. supply line from the city main, used to control the water supply. A venturi meter in the discharge line controls the chemical proportioning equipment. The control valve, the chemical mixing tank and the lime-soda ash feeding system are all located in a pit approximately 15 ft. square and 10 ft. deep.

The lime-soda ash feeding system consists of a chemical-mixing tank, a float, a proportioning device and a chemical pump. The mixing tank is 8 ft. by 10 ft. in plan and about 10 ft. deep, with a semi-cylindrical bottom to permit the operation of a paddle-wheel agitator which revolves on a horizontal axis. The tank is of sufficient capacity for a single charge to last for 16 hours when the plant is running at full capacity.

Typical Analyses of Raw and Treated Water Union Pacific Transfer, Council Bluffs, Iowa

Solids in solution	Raw water		Treated water	
	Grains per gal.	Pounds per 1,000 gal.	Grains per gal.	Pounds per 1,000 gal.
Silica	2.22	0.317	1.17	0.167
Oxides of iron and aluminum	0.23	0.033	0.12	0.017
Calcium carbonate	13.34	1.906	1.18	0.169
Magnesium carbonate	...	...	0.17	0.024
Calcium sulphate	0.41	0.059	...	...
Magnesium sulphate	8.81	1.258	...	...
Incrusting solids	25.01	3.573	2.64	0.377
Alkali carbonates	...	...	3.98	0.569
Alkali sulphates	12.89	1.841	14.93	2.133
Alkali chlorides	1.93	0.276	1.53	0.218
Alkali nitrates	Trace		Trace	
Organic matter	...	...	1.12	0.160
	...	...	1.96	0.280
Non-incrusting solids	14.82	2.117	23.52	3.360
Total solids	39.83	5.690	26.16	3.737
	Neutral to phenophthalen		Alkaline to phenophthalen	

Pumping Ratio Remains Constant

Connected to the frame of the mixing tank is a parabolic bowl containing a float, above which is a differential proportioning box having a diaphragm, the upper side of which is connected with the high-pressure side of the venturi meter, while the lower side is tapped into the low-pressure side of the meter. Inside the mixing tank, attached to the agitator axle there is a water wheel which carries a series of tilting buckets that pick up a portion of the lime-soda ash solution as the agitator revolves, and discharge into a box which drains to the suction of the chemical pump. The pumping ratio between this pump and the raw water pump is held constant by the differential proportioner, while the amount of the chemical solution that is pumped is controlled by the float which opens and closes the jaws of the discharge from the water wheel.

In addition to the equipment for feeding the lime and

(*Continued on page 338*)

Economic Life of Locomotives

A study of the effect of the low utilization of the larger part of the locomotive inventory on maintenance cost

By James R. Macken

Supervisor of Costs, Office of the Chief of Motive Power and Rolling Stock, Canadian Pacific

THE studies of the economic life of a locomotive published in the *Railway Age,* July 10, 1937, page 41, and October 9, 1937, page 483, were specifically related to the performance of a Pacific type locomotive with a consistently high degree of utilization over a period of 18 years.

It was suggested that the cost curve developed by this locomotive could be applied relatively to any other class of locomotive with allowances made for type and utilization. There was, however, an unexplored doubt as to what form of curve would be developed if the study was applied to one or more types of locomotives where utilization was limited by the class of service for which designed and by the falling off in the actual movement by the railroad of the kind of merchandise likely to be moved.

It has never been sufficiently developed that a high percentage of most locomotive inventories are destined to have a relatively low degree of utilization. This may be put in another way by stating that not more than 25 per cent to 30 per cent of most locomotive inventories take care of around 50 per cent to 60 per cent of the total locomotive mileage. The balance of the locomotive inventory, namely, 70 per cent to 75 per cent, is destined to share in the 40 per cent to 50 per cent available balance of mileage. This means that many locomotives will seldom exceed 30,000 to 40,000 miles per annum, and will fall due for heavy shop repairs with comparatively low mileage credits, so that the cost per locomotive-mile for shop repairs is inevitably high so long as (1) periodic examinations calling for extensive removal and re-application of material continue—(2) the general design and performance of the locomotive makes such periodic examinations necessary and the removal and re-application of material so expensive.

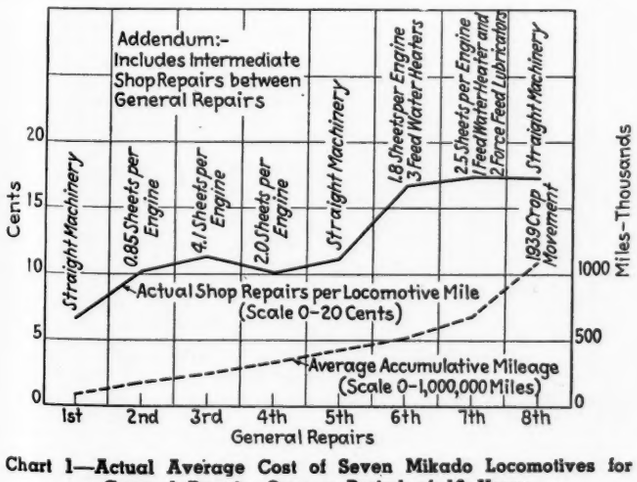


Chart 1—Actual Average Cost of Seven Mikado Locomotives for General Repair, Over a Period of 19 Years

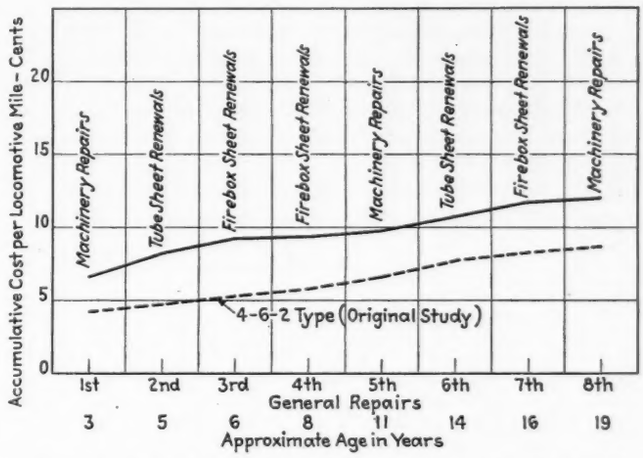


Chart 2—Accumulative Cost of Seven Locomotives Compared with a Pacific Type Locomotive

With a view to examining locomotive shop maintenance from this angle, a study has been made of the performance of seven, 2-8-2 class, Mikado type locomotives, each having a tractive force of 56,000 lb., a boiler pressure of 200 lb., and a total weight on drivers of 247,000 lb. The only selective conditions governing these particular seven locomotives was that utilization should be reasonably continuous. It may, therefore, be accepted that the study represents performance conditions of fair utilization and closely approaching the maximum. These particular locomotives were designed primarily to move heavy trains of grain across the Canadian prairies to the elevators at the head of the lakes, and, while making considerable mileage in part of each year, were destined to make limited mileage the balance of each year. Further, the economic performance of the locomotive under pressure was such that the incentive was always present to develop this class of locomotive, but when nature failed to produce the necessary train movement, on account of short crops, the economical utilization of such power in lighter train movements was strictly limited.

Explanation of The Charts

In the charts that follow, all data of cost and performance has been averaged for the seven locomotives. The general repairs are made to occur at the same time, as, of course actually a spread of many months may occur. The mileages follow the general repairs.

Chart No. 1—This shows the average actual cost per general shop repair over a period of about 19 years. The accumulative mileage is also shown and the very sharp upturn in mileage between the seventh and the eighth general repair indicates the affect of the 1939

crop movement as referred to in a previous paragraph. The tube sheet and firebox renewals are shown averaged per engine against each general repair. The 0.85 sheets per locomotive at the second general repair are tube sheet renewals. The 4.1 sheets and 2.0 sheets at the third and fourth general repair are firebox sheet renewals. The sixth and seventh general repair costs are influenced by betterment applications, but only to less than 5 per cent of the total costs involved. The recurrence of the straight machinery repairs, as a natural sequence to firebox renewals, is shown at the fifth and the eighth repair. The average accumulative mileage is slightly under 1,100,000 miles, and the shop cost per mile at the eighth general repair is 17.29 cents. The approximate average age of the locomotive at the eighth general repair is 19 years.

Chart No. 2—This shows the average accumulative cost per locomotive mile for these seven locomotives, together with the original curve for the Pacific type locomotive developed in the study of 1937. The relation between the two curves is obvious. It will be of interest to note the average mileage per annum of the 2-8-2 class locomotives was 37,400 miles, and the average mileage per annum for the Pacific type locomotive, close to 60,000 miles per annum. The relation of the two curves would appear to indicate that utilization only affects the

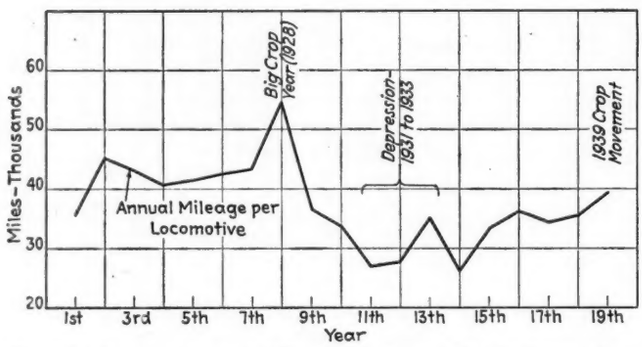


Chart 3—Average Annual Mileage for Seven Mikado Locomotives

position of the curve on the scale, but does not affect the general trend.

Chart No. 3—This curve shows average annual mileage for the seven 2-8-2 class locomotives. The interesting feature is the variation in utilization. The affect of big crop years and small crop and business years is very clearly shown and indicates the great difficulties involved in meeting economically the conditions as they develop. The curve also contributes an interesting study if read in conjunction with the accumulative cost curve in Chart No. 2.

Chart No. 4—This is the approximate average shop repair detention for the 2-8-2 class locomotives. The interesting information from this curve is the relation it bears to the original detention curve shown for the Pacific type locomotive in 1937. In other words, both indicate maintenance detention increases as the locomotive grows older.

Chart No. 5—This chart shows the accumulative shop repair cost curve for the seven 2-8-2 class locomotives in comparison with a similar accumulative shop repair cost curve for seven 4-6-0, 10-wheel type locomotives, tractive force 33,000 lb., weight on drivers 156,000 lb. The curve for the 4-6-0 type locomotives commences when they are 11 years old and extends, approximately, to the 26th year of age. These seven 4-6-0 locomotives were selected under the same conditions referred to in relation to the seven 2-8-2 locomotives, namely, a reasonably high degree of utilization over the whole period of the study. Apart from this the selection was elastic

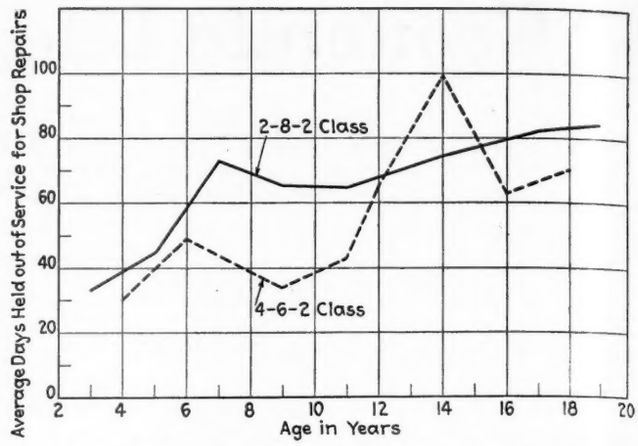


Chart 4—Detention for Repairs, Mikado and Pacific Type Locomotives, at Ages up to 19 Years

enough to cover any other engines of the same class. According to the previous studies made in cost and performance it is logical to assume there is some relation between cost of maintenance per locomotive mile and class, or type, of locomotive. Actually a locomotive of the 4-6-0 type with a tractive force of 33,000 lb. should have a much lower maintenance cost per locomotive mile, on a comparative utilization basis, or even approximately comparative utilization, than a 2-8-2 type locomotive with a tractive force of 56,000 lb. It does not require very much argument to support this fact as the larger and heavier locomotive obviously requires more costly repairs, but, contrary to this expectation, the lighter and older 4-6-0 locomotive costs more than the heavier 2-8-2 locomotive for a period of approximately 12 service years. The excess cost for these particular seven 4-6-0 locomotives is, approximately, $98,000 and this is shown clearly in the area shadowed between *A* and *B* on the two curves. The explanation is also shown in the persistent firebox and tube sheet renewals of the 4-6-0 class locomotives. While the seven 2-8-2 class locomotives cross the 4-6-0 locomotive curve at the sixth general repair, this is explained by the machinery repairs only to the 4-6-0 locomotives at this repair, and the cost is again rising at the seventh general repair and will again cross the 2-8-2 class curve at the eighth general repair.

Chart No. 6—This shows the average annual mileage

(*Continued on page 338*)

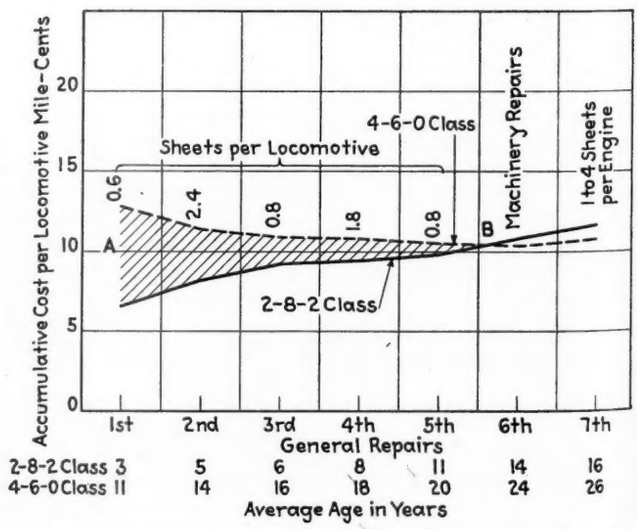


Chart 5—Accumulative Repair Costs, Mikados and Ten-Wheel Type Locomotives, Per Locomotive Mile

S. 2009 Again Before the Senate

WASHINGTON, D. C.

THE House-approved conference report on S. 2009, the omnibus transportation bill, was expected to be disposed of in the Senate on Thursday or Friday of this week. Senator Wheeler, chairman of the Senate committee on interstate commerce, planned to call it up on Thursday for continuation of the discussion begun on August 30. The bill's schedule was delayed one day when the Senate, meeting on Wednesday after the Labor-Day week-end recess, adjourned again out of respect to Senator Lundeen, Farmer-Laborite of Minnesota, who was among the 25 killed in last Saturday's airplane accident near Lovettsville, Va.

The conference report faced its first Senate test on the point of order raised by Senator Clark, Democrat of Missouri, with respect to changes in the Panama Canal Act made by the conferees. It was the discussion precipitated by this point of order that precluded the carrying out of Majority Leader Barkley's announced plan to have the Senate dispose of the conference report before the Labor-Day recess. A vote on the point of order became necessary because the Senate's President Pro Tempore, Senator Pittman, Democrat of Nevada, who occupied the chair in the absence of Vice-President Garner, was disinclined to rule on the issue; he submitted the question to the Senate for determination. Meanwhile Mr. Pittman called attention to the fact that the precedents which he presented "are contradictory"; and he said in another place that "there is evidence before the Senate of long years' standing that very frequently Senators, instead of voting on the question of violation of the rule, vote on whether or not they want the conference report agreed to."

"Smoke Screen," Says Wheeler

Chairman Wheeler had previously asserted in the latter connection that the furore raised over the conferees' action in making what they regard as merely clarifying changes in the Panama Canal Act "is only a smoke screen to defeat the proposed legislation." "I know," said the Montanan, "that the water carriers have opposed this legislation and fought it upon every ground they could, and have tried to convince some Senators that the conference report exceeds the authority of the conferees. . . . All I am trying to do is to get the members of the Senate themselves not to accept the propaganda that has been sent out but to take the law and the facts." In his fight against the point of order Chairman Wheeler had the support of Majority Leader Barkley, who discussed the latitude which the conferees had and stated it to be his view that "the point of order ought not to be sustained."

When Senator Wheeler first called up the conference report, Senator Clark did not raise the point of order immediately, it being his disposition not to interfere with the interstate commerce committee chairman's explanation of the measure. When it became evident that the explanation was not getting along because of interruptions from Senators questioning Chairman Wheeler about the provisions relied upon by the point-of-order makers, Mr. Clark formally made his point of order. Meanwhile Senator Wheeler had, however, been able to point out the main differences between the present conference report and the one previously submitted, but not called up in the Senate after its recommittal by the House.

The Montanan cited the modified Harrington "labor-protection" amendment and the modified Jones agricultural rates amendment which now make the report "satisfactory to Representative Jones and also to the labor people." Continuing, Senator Wheeler recalled how he had introduced the original Senate bill "at the request of the President of the United States"; and how that bill embodied as many of the recommendations of the President's committee-of-six as Mr. Wheeler found himself able to go along with. Then came the Senate committee hearings where "everybody who wanted to be heard was heard." In the latter connection Mr. Wheeler ventured the assertion that the bill "was given more careful and more thoughtful consideration than any other bill which ever came before the Senate in my time."

In similar fashion did the Montanan highlight the progress of the bill through the House, where the Senate's codified version was rejected in committee in favor of measure taking the form of amendments to the present Interstate Commerce Act, including a new Part III for the regulation of water carriers. The House form was accepted by the conferees; but Senator Wheeler thought it could be fairly said that the final version "contains legislation on every important point included in the Senate bill." After next telling how the first conference report was recommitted by the House, and how a similar point of order was overruled there when the new version was approved on August 12, the interstate commerce committee chairman came to his discussion of the Panama Canal Act change which, he said, "apparently has caused some confusion in the minds of those opposing this legislation." He hoped that after his explanation his colleagues would come to the conclusion "that as a matter of fact we have not changed the intent and purpose of the Panama Canal Act in the slightest degree."

With that the Montanan took up the controversial paragraphs, one by one and in considerable detail, insisting in many arguments with different Senators that the clarifying language with respect to the commission's jurisdiction over new acquisitions by railroads of water lines, other than those operating through the Panama Canal, does not change the substance of existing law. Again and again Mr. Wheeler tried to get over his point that the new language would merely authorize in an unambiguous way what the commission, in three or four decisions which have never been appealed to the courts, has assumed that the present law authorizes it to do.

The burden of this debate with Chairman Wheeler was carried by Senator Clark and Senator Miller, Democrat of Arkansas, sponsor of the Senate version of the Miller-Wadsworth rate amendment which was eliminated by the conferees. Meanwhile Conferees Reed, Republican of Kansas, and Truman, Democrat of Missouri, gave Senator Wheeler a helping hand here and there during the course of the discussion. At one point Mr. Wheeler told Senator Miller that the water carriers would be in a better position under S. 2009 than they are at present.

Water Carriers Well-Protected

"Under the present law," the Montanan explained, "the Interstate Commerce Commission may not only issue a permit to a railroad company to buy a steamship line, but it may permit a railroad to cut rates, which would put the little fellow out of business. Under this bill the commission may do exactly what it could do under the old bill with reference to granting permission, but it may not permit a railroad to cut rates to put the little fellow out of business, because the bill provides that the rates must all be regulated at the same time.

To strengthen that provision so that the inherent advantages of each form of transportation may be recognized we wrote into the bill in conference provisions which went further than either the Senate or the House had gone in trying to protect those engaged in the shipping industry."

When Senator Miller next suggested that it was up to the Senate to decide whether or not the conferees had exceeded their power, Chairman Wheeler agreed. "I would not assume to speak for the Senate, and say that it must adopt everything the conferees have done," he said. "So far as I am personally concerned I will say to the Senator that I undertook this job unwillingly, perhaps, only after the President of the United States had requested me to undertake it, and after the committee-of-six had begged me to do so."

With Senators Connally of Texas and McKellar of Tennessee, Democrats, firing questions at Senator Wheeler, Conferee Reed entered the discussion to assert that "the conference report does not confer on the Interstate Commerce Commission any jurisdiction which it did not have under the Panama Canal Act, nor does it subtract any power." He added: "There was an ambiguity as between the three paragraphs in section 5 of the Interstate Commerce Act. We have removed that ambiguity, but we have not changed in the slightest degree the power of the Interstate Commerce Commission, which was given to it in the original act, and which has been carried through all the 26 years without a single case decided under the Panama Canal Act being appealed to the courts. . . . There is a common misconception that the original Panama Canal Act was a prohibition against a railroad company owning any interest in a competing carrier by water. It is nothing of the kind. If we consider only the first paragraph of the Panama Canal Act that may be true; but the first paragraph is modified by the language of the subsequent paragraphs. All through the years that power has been vested in the commission. We have not added to it or subtracted from it, nor have we changed the intent of the original Panama Canal Act in any way."

Clark's Point of Order

After Senator Reed had spoken Senator Wheeler resumed his defense of the conferees' action, and shortly thereafter Senator Clark raised his point of order with this statement: "I make the point of order that the conference report involves an excess of the jurisdiction of the conferees. I do that on the ground, in the first place, that the conference report in the case of the Miller-Wadsworth amendment has excluded a matter agreed to by both Houses. In the second place, that in a partial repeal of the Panama Canal Act and the Motor Transport Act the conferees have injected new matter never considered by either House." Against Mr. Clark's point the conferees relied generally on precedents holding that when one house strikes out all but the enacting clause of a bill passed by the other house and substitutes its own language, the whole subject of the legislation is before the conferees. Also, in the case of the Miller-Wadsworth amendment, there was the fact that the Senate and House versions were different in that the latter contained a proviso to the effect that nothing therein should affect the long-and-short-haul clause.

However, as noted above, President Pro Tempore Pittman did not rule on the point. He made the aforementioned remarks and other comments on the issue, and proceeded to insert into the record various pertinent rulings of the past. Then he submitted the question to the Senate, and the debate went on in much the same fashion as it had before Mr. Pittman's talk; although there was more said about the Miller-Wadsworth amendment. But before the latter came up Senator ("Cotton Ed") Smith, Democrat of South Carolina, had quite a bit to say. Among other things he observed that buses and trucks "utilize the highways just as a barefoot man or a man rolling a wheelbarrow does"; and thus "the cost is nothing like the cost incident to keeping up a railroad." While he is "a friend of the railroads," Mr. Smith nevertheless thinks that "we have no right to say to a method of transportation which is essentially cheaper, 'You have to pay the same tax and be put under the same jurisdiction as to expense.'" Senator Wheeler cited for the North Carolinan, the bill's declaration of policy calling for recognition by the I. C. C. of the "inherent advantages" of each form of transportation; but "Cotton Ed" replied that he had long since learned that a bill's preamble "generally contains a joker that nullifies the whole thing." Other questions were put to Chairman Wheeler by Senators Adams of Colorado and Ellender of Louisiana, Democrats; and the Montanan told the latter that the Panama Canal Act change embodied "clarifying language" which was suggested by the I. C. C. and which none of the conferees considered "to be of any moment" except that "it would make the intention of the Congress more plain and simple." Then came Senator Barkley's aforementioned argument against a sustaining of the point of order.

Barkley Supports Conferees

The Majority Leader recalled that he was a House member of the conference committee which worked out the Transportation Act of 1920. Then the Esch bill came over to the Senate and the latter substituted the language of the Cummins bill; and the conferees' action in writing an entirely new bill was sustained by both the Senate and the House. There was no doubt in Mr. Barkley's mind that what the present conferees did "is germane both to the Senate and the House bills." Senator Wheeler thanked the Majority Leader, and was soon into the argument over the elimination of the Miller-Wadsworth amendment.

"The effect of the amendment," the interstate commerce committee chairman said, "would be to raise the freight rates on a large part of the heavy commerce of the United States. Passengers in the United States are carried at a heavy loss which has been approximated at $100,000,000 a year. If the Miller-Wadsworth amendment was adopted, the railroads theoretically would have to recover that $100,000,000 by higher fares. Obviously they could not do so. . . . The Wadsworth amendment means that a rail carrier could not reduce a rate below the full allocated cost in order to move the traffic that would otherwise not be moved." Senator Truman observed that if the Miller-Wadsworth amendment were left in the bill "it would absolutely put every short-line railroad in the country out of business, and deprive every little interior town in the country of transportation." He added that the question had been considered thoroughly in conference where the conferees felt that, under the precedents, they had "a right to take out the amendment in order to save the bill."

Senator Miller, attacking the action of the conferees, did not discuss the merits of his amendment. He confined his discussion to the point of order. But Senator Wheeler did not enter much of the subsequent discussion on August 30. He had previously let it be known that he had taken all the time he intended to on the point-of-order issue; but he did say that a vote to sustain the point of order would be the "end of the bill."

First Reports in Truck Size and Weight Study

WASHINGTON, D. C.

MOVING forward on the job of filling Congress' order for a study of the need for federal regulation of sizes and weights of motor vehicles, the Interstate Commerce Commission last week released for comment and criticism three preliminary reports which have been prepared by members of the staff of the Bureau of Motor Carriers from some of the material thus far gathered in the commission's Ex Parte No. MC-15 investigation of the subject. The preliminary reports are voluminous documents, numbered 1, 2 and 3 and entitled "State Limitations of Sizes and Weights of Motor Vehicles"; "Road Facilities and Vehicles Used in Highway Transport"; and "Sizes and Weights of Motor Vehicles in Relation to Highway Safety."

All were compiled under the general direction of Dr. C. S. Morgan and H. H. Kelly, the former of whom had much to do with the study of government aids to transport which was issued last April by I. C. C. Chairman Joseph B. Eastman, former federal co-ordinator of transportation. Other preliminary reports will be released at the earliest practicable date, said an accompanying notice from I. C. C. Secretary W. P. Bartel. They will deal with the "engineering aspects of road and bridge facilities in relation to the loads placed upon them," and "legal considerations in the regulation of motor vehicle sizes and weights." Also, there will be a study of "the economic phases of the investigation."

Motor Interests Have Been Anxious

The commission's mandate to make this investigation came in the Motor Carrier Act, but the anxious truck and highway interests had inserted into S. 2009, the omnibus transportation bill, a provision authorizing and directing the commission to expedite the matter. Secretary Bartel's aforementioned notice points out how the commission in an effort to expedite the completion of its report to Congress, has revised its plan of procedure. It will now first consider the statements filed on the preliminary reports and then decided whether or not the hearings, which it had previously indicated would be held in various parts of the country, will be required.

"In the event such hearing is held," Secretary Bartel goes on, "the persons who have participated in the preparation of the respective preliminary reports, except report No. 5 (legal considerations in the regulation of motor vehicle sizes and weights), will be available for examination, and, if possible, some of the results of the aforementioned economic investigation will be presented.

"The individual states have in their possession data from the Highway Planning Surveys and other sources which go beyond those which it was practicable or possible to obtain and utilize in the preparation of the staff reports. It is hoped that studies based on these more detailed data will be presented for the record for the additional light they will throw on the problem in hand. The invitation to file statements will afford opportunity for the parties to offer recommendations, based on factual evidence, as to whether there is need for federal regulation of the maximum sizes and weights of motor vehicles used in transportation in interstate or foreign commerce, and, if such regulation be recommended, to indicate its scope and character."

The statements may be filed by any interested party "upon release of reports Nos. 4 and 5 and until November 10, 1940"; they may take the form of comments on or criticism of the reports or they may deal independently with subjects treated in those reports, "or other subjects pertinent to this investigation."

Nature and Scope of Reports

Meanwhile Secretary Bartel's announcement had made a brief statement as to the nature and scope of the three preliminary reports released. Report No. 1, State Limitations of Sizes and Weights of Motor Vehicles, consists of a general and of a more detailed analysis of state limitations as of December 31, 1939, with an addendum which sets out the important changes through June 15, 1940. Also given are a brief resumé of the historical development of the state limitations and the results of an inquiry into the extent of the jurisdiction of municipalities and other local governmental units in size and weight matters and of the exercise of such jurisdiction. The report was compiled by Mortier W. LaFever from material contained in answers to the questionnaires sent by the commission to the governors of the states on August 25, 1938.

Report No. 2, Road Facilities and Vehicles Used in Highway Transport, was compiled by F. W. Amadon who drew "substantially all" of the material presented from "data obtained in the course of the Highway Planning Surveys and on file, generally in preliminary form, with the Public Roads Administration." The report is divided into three parts as follows: Part I shows the extent of the road systems, the degree of their improvement as measured by surfacing types and widths, the extent to which restricted sight distances and severe grades and curvature are present, and the wide range in the use made of the different systems; Part II shows the uses made of the different systems in totals and broken down according to type and size of vehicles and the service in which the vehicles are engaged; Part III presents detailed data as to vehicle characteristics.

With further reference to Report No. 2, Secretary Bartel says that in it "an indication is given of the greater importance, from the national viewpoint, of the Federal-Aid System and particularly the part thereof that is known as the U. S. numbered system." The I. C. C. secretary adds: "The views of the parties as to the desirable delimitations, if any, of the road systems which should be contemplated in the enactment of federal regulation, should such regulation be deemed in the public interest, are solicited. Since the road systems which are of major importance for commercial traffic are likewise of outstanding importance in relation to national defense, information submitted as to desirable limitations of the road systems may well include consideration of military needs."

Report No. 3, Sizes and Weights of Motor Vehicles in Relation to Highway Safety, compiled by Karl F. Walker, considers the bearing on safety of the physical dimensions, weights and structural characteristics of vehicles, including the performance of various types and sizes of single-unit vehicles and combinations in terms of road speeds, ability to ascend grades, ability to stop, and ease of maneuvering. "This report," says Mr. Bartel, "necessarily employs concepts of responsibility for road and street facilities which differ somewhat from those involved in an economic analysis of responsibility." The I. C. C. Secretary further describes Report No. 3 as one which presents material "primarily of an engineering character . . . " It is based upon data "derived from a variety of special studies made by federal, state and other highway experts and, to some extent, upon theoretical calculations where experimental data are lacking or are not required for the purpose in hand." Data as to vehicles were drawn largely from Report No. 2.

Economic Life of Locomotives

(*Continued from page 334*)

for the 2-8-2 class and the 4-6-0 class locomotives. It is obvious both classes are in the low mileage field and are limited as to utilization.

This study would appear to offer definite support as to maintenance cost trends for all classes of locomotives and would also give actual evidence of the difference in shop maintenance expenditure for new locomotives and for old locomotives. There is, however, another angle to be reviewed and that is the whole question of the

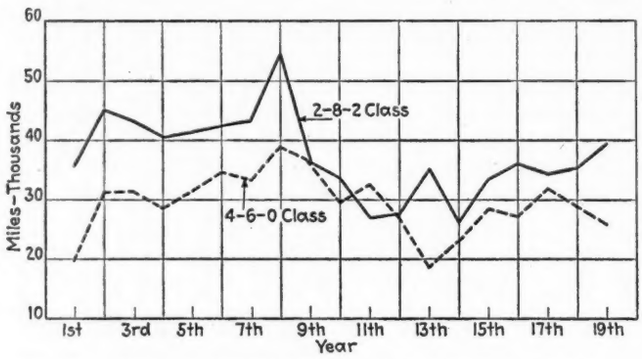


Chart 6—Average Annual Mileage of Two Types in Relation to Years in Service

investment involved in replacing locomotives in the low mileage field. While it will be conceded that the difference in shop maintenance costs is only one of the economies involved in replacing old locomotives—the savings in fuel consumption will be very much greater with the modern locomotive—there remains the investment question. This angle should be explored by locomotive builders to try and offset the apparent economy involved in maintaining old locomotives against the factual economy involved in replacing them. In other words, what can be done to reduce investment charges in the replacement of locomotives in the low mileage field which in most railway inventories represent 70 per cent to 75 per cent of the total.

Union Pacific Builds Large Water Softening Plant

(*Continued from page 332*)

soda ash solution to the settling tank, there is a Nalco Type-P dry feeder for the sodium aluminate and a Nalco wet feeder for the organic anti-corrosion solution. The lime-soda ash mixture is pumped into a weir box at the top of the tank, where it is diluted and mixed with the raw water as it passes around a series of baffles. The discharge from the weir box flows through a circular pipe into the downcomer to impart a circular motion to the water and thus complete the dispersion of the chemicals. The control of the feed from the two Nalco proportioners is independent of that for the lime-soda ash feed and from each other. Both discharge directly but independently into the downcomer rather than through the weir box.

Plant Entirely Automatic

This plant is operated electrically and is entirely automatic, except the handling of the chemicals and the charging of the feeders. It can be shut down or placed in operation manually by opening or closing a master switch, but normally this is done only while the lime-soda ash mixing tank is being charged. At other times the control is by means of a float switch in the storage tank, through a solenoid switch.

When the storage tank is full, the float closes a circuit which actuates the solenoid to cut off the power supply, thus shutting down all of the equipment. The valve in the supply line from the city is of the thruster type and is held open electrically as long as the power current is on. When this is cut off, the valve is closed slowly by a spring. This insures that there will be no leakage to overflow the tank or discharge raw water into the treated supply. When the water in the storage tank is drawn down sufficiently to open the float switch, the solenoid is de-energized, the power circuit is closed and the plant is again in operation.

It will be seen from the foregoing that the need for attendance is eliminated except for the purpose of charging the mixing and feeder tanks, to keep the place clean, to make the daily water tests and to handle the sludge disposal. For these purposes an attendant is employed during one shift.

Two typical analyses are given, one of the raw water and one of the treated water, which indicate the character of the raw water and the effectiveness of the treatment. In studying these analyses it must be borne in mind that, as delivered by the city, the water carries no solids in suspension, but is high in dissolved solids, more than 60 per cent of which are scale-forming. It will also be noted from the analysis that approximately 90 per cent of these latter solids are removed through treatment.

The plant was designed and constructed by G. H. Trout, bridge engineer, in collaboration with W. M. Barr, chief chemical and metallurgical engineer, under the general direction of B. H. Prater, chief engineer. The operation of the plant is under Dr. Barr's direction.

Communication . . .

Are Railroads Ready for A War in North America?

NEW YORK

TO THE EDITOR:

I have read with interest the statement made by C. E. Smith in the August 10th issue of *Railway Age* in reply to my contention that neither our railroads, nor the army, nor the railroad personnel were prepared for *military railroad opeation.*

I wish to state very frankly that I have no desire to enter into any controversy on this subject, either with Mr. Smith or any one else. My statement was intended as a constructive contribution and was based on 35 years of practical railroad experience and, what is most important, upon first-hand knowledge as to the true military railroad requirements. I would like to advise Mr. Smith and others who may be interested in this subject to read what General Pershing has to say in his Memoirs concerning our transportation efforts in France, and also Colonel W. J. Wilgus' book on Transporting the A. E. F. in Western Europe.

A War Here Not Same as a War in Europe

I fully appreciate that our railroads have made many improvements since the last war and that they can handle more tonnage with fewer cars and locomotives than they could in the early twenties, because of the greater capacity of the equipment in use and improved operation. There is no quarrel on that score. My argument has been that, if we were faced with a real major military emergency, in spite of recent equipment acquisitions, we would not have sufficient equipment, particularly in view of the fact that much of the equipment on hand is too old and unserviceable. Even Mr. Budd has now recognized this fact and he

has recently requested that the carriers undertake extensive equipment repair programs so as to bring the serviceable cars up to at least 94 per cent of the total cars on hand.

If we were now faced with a real major military emergency we would need about 25 per cent more equipment than we have on hand. Much of this is due to special requirements and to abuses and losses during such a war operation, and particularly in view of the old age of much of our present equipment. Much of this shortage would be in the smaller capacity category. Many of our railroads would not be equipped to handle military operations, requiring special plant additions and improvements. Our railroad personnel is not trained to handle military transportation as is required in a modern war. These special problems are not understood, nor is the vast preparation which must be made to meet such an operation. Until these fundamentals are fully understood we do not even begin to be prepared.

R. R. Operation in a Fighting Zone

Although our civilian operation at home must be given serious consideration, and full preparations must be made accordingly, we must learn to realize that there is a wide difference between the type of military transportation close to a fighting zone, as we were confronted with in France and the preparation required for such an operation, and the so-called military transportation with which our railroads were confronted at home during the last war and which is used erroneously as a base as to what our requirements would be in a major military operation. That was not military transportation in the true sense of the word as I have used it. I have often deplored the fact that this knowledge is not imparted to those who may be called upon to handle such a military operation in the future so that they might prepare themselves accordingly. If this had been understood by Mr. Smith and others I am sure that they would have found no cause to differ with me. In fact I feel certain that they would have insisted on improving their condition accordingly and of training their personnel in a manner to be able to give the fullest possible cooperation to the fighting forces, because I have found railroaders in general to be very patriotic. Today our railroad personnel could not give such war time cooperation in a military zone and our fighting forces would be seriously handicapped. Recent maneuver operations are no criterion.

I wish to emphasize here again that, although we were experienced in railroad transportation, it took us about six months of real sweat and toil in France to learn the military transportation requirements, for there was no one in the army who knew anything about this, and it took us about 1½ years to prepare for it, in spite of the fact that the French railroads were probably in as good a condition as our railroads are today and the further fact that we depended to a large extent upon the French to transport our requirements. A reading of the above mentioned books will convince anyone of the accuracy of my statements. We must also not forget that in a future military emergency we may not have such an accommodating enemy who would give us again 1½ years in which to prepare. We must be prepared to meet any emergency on short notice with at least our initial requirements and then build up as fast as we can.

Our Job Might Be Tougher Than That of A. E. F.

If we were engaged in an actual major military operation, whether that be in this country or elsewhere, we would have to meet a situation close to such a fighting zone similar to the one we were confronted with in France and we should prepare accordingly. In fact a modern "blitzkrieg" imposes even far greater special transportation problems and requirements than we had to deal with in France, and which we would be utterly unprepared to meet today.

Mr. Smith has made many incorrect and rather rash statements and, while I could very easily disprove many of his contentions, no good would come from even attempting to do so. All I can say, to use a biblical expression as he has done. is "father forgive him for he does not know what he is saying."

However, as an example of military requirements, and for the benefit of those interested, I will make just one reply. I had stated "for a military operation in a fighting zone it is not the capacity that counts, but the number of cars and locomotives available." Mr. Smith answers that "capacity will always count" and he states that railroad men with military experience will disagree with me. That, of course, is only one of the many points in his arguments where he is wrong and where no man with true military transportation experience will disagree with me.

In our operation at home, or in the so-called "Zone of the Rear," larger capacity cars may be used to good advantage, provided such cars are certain to be unloaded before reaching the military front, because ahead of the forward storage depot, or the Regulating Station, a very different condition will exist. It should also be stated here that, contrary to statements made that railroads will be operated by the railroads themselves, in the military zone separate military trains will be operated by military personnel.

Need for Many Small-Capacity Cars

Military transportation imposes many special conditions, requiring special facilities and special operation. Limiting my comments to the above question and the use of cars in a military theater, it should be realized that it is necessary to furnish a balanced daily supply to each front line military unit, as well as reserve and training units, comprising a Brigade, or a Division, or a Field Army. In addition to this there must be held in readiness a considerable supply on wheels at the Regulating Station for instant movement forward in case of loss through accident or enemy action. In addition to this normal supply, similar but separate facilities and trains are required to handle ammunition, varying naturally with the action at the front. These are military necessities which considerably increase the number of cars and trains needed. The statement made by Mr. Smith that cars would not be forwarded unless they could be unloaded does not apply to military operations.

It must be realized that these military units are not found in one large central tent city with ample railroad facilities. The military supply must be forwarded in separate cars for the various smaller units comprising such a force so as to permit the sidetracking of this supply wherever such units are located and to permit these units to handle their own supply from the railhead. This necessary procedure requires smaller cars and consequently a larger number of them. In the last war we found the 30-ton capacity car well suited for this purpose, but since then the army has been planning on using 20-ton cars instead. While I believe that a somewhat larger car can be used to good advantage this, nevertheless, completely refutes Mr. Smith's contention that "capacity will always count." It does not. In a real military operation it is the number of cars and locomotives that counts. Fifty thousand 50-ton cars would be hardly any more useful than fifty thousand 25- to 30- ton cars, in fact the heavier cars would only be half full and that would require the hauling of just so much dead weight tonnage, a decided disadvantage.

We must also learn to realize that a military operation is often fought along a front that will make it necessary to use many of the poorer sidelines with very small load capacities which greatly limits the weight of the locomotives which can be used and consequently the number of cars and, to meet the military requirements, more trains will have to be operated, requiring more equipment and more personnel.

It may thus be seen that to state that the railroads were "always in a state of national defense and prepared for *any military emergency*" is, therefore, not correct, particularly if we use the term *"military emergency"* in the true sense in which I have used it.

L. Alfred Jenny
Consulting Engineer on Transportation
Lt. Colonel Engineers Reserve

An Example of "Clear Gravy" obtained by exhaustive use of equipment and exploitation of travelers' demand is given in a little-known operation of the Chicago & North Western. During the horse-racing season at Arlington, Ill. (about 22 miles from Chicago), the North Western adds a standard Pullman sleeping car to its special race track train of suburban coaches. Apparently race-goers are optimistic because the car ordinarily carries as many as 41 passengers at an extra 55 cents per person. It is virtually all net profit to the railroad, for the sleeping car ordinarily arrives in the morning on an over-night train and lies idle in the yards until the following night when it leaves on its regular run. An officer of the road has observed that "it is the pennies that make up the dollars."

NEWS

Express Strike Up to Harrison

Agency and union disagree on meaning of findings of emergency board

With the Brotherhood of Railway Clerks' committee armed with power to fix the time for a strike of express employees, negotiations were resumed this week between that committee and representatives of the Railway Express Agency with respect to making effective the recent hours-of-service findings of President Roosevelt's emergency board. The findings of the emergency board on the 44-hour-week demand of the Clerks were reviewed in the *Railway Age* of August 10, page 225. As those findings were published on August 2 the 30-day period during which the Railway Labor Act freezes the status quo expired on September 2.

As that date approached, the negotiations last week reached an impasse, with each side claiming that its position found support in the emergency-board report. George M. Harrison, president of the Clerks, called a September 1 meeting of his organization's district chairmen for Washington, D. C. At that meeting, Mr. Harrison said, the chairmen endorsed all the negotiating committee had done, and conferred on that committee the aforementioned power to fix the date for a strike.

Meanwhile A. M. Hartung, vice-president of R. E. A. in charge of personnel, has stated that the Agency was ready to put the emergency-board recommendations into effect; while President L. O. Head of R. E. A. has issued the following statement:

"Some months ago, representatives of the Brotherhood of Railway Clerks demanded a 44-hour week for all employees and various changes in our working agreement. At the same time, the Express Agency requested other changes in the working agreement. Conferences were held between committees representing the clerks' organization and the Agency, but no agreement was reached. The services of the National Mediation Board then were invoked but mediation failed, whereupon the Mediation Board made an offer of arbitration as provided by the Railway Labor Act. The Railway Express Agency agreed to arbitration but the representatives of the clerks declined to submit the dispute to arbitration and called a nation-wide strike effective July 12, 1940.

"Inasmuch as such a strike threatened substantially to interrupt interstate commerce to a degree such as to deprive the country of essential transportation service, the Mediation Board notified the President of the United States who created an Emergency Board to investigate and report respecting such dispute, in accordance with the provision of the Railway Labor Act.

"Following hearings, argument and consideration, this Emergency Board on August 2, 1940, rendered a report to President Roosevelt in which it recommended that the Express Agency grant a 44-hour week to employees in its service with certain exceptions.

"The proposed change in rules not bearing directly on the 44-hour week were dismissed. After the report of the Emergency Board was rendered, the committee representing the clerks' organization demanded that the Express Agency do more than was recommended by the Emergency Board and make practically all the changes in the working agreement which the committee had demanded in the beginning and which the Emergency Board had dismissed. The Express Agency felt that it could not go beyond the recommendations of the Emergency Board and the clerks threatened to strike which would create a serious situation.

"The Express Agency has been and is willing to put into effect the recommendations of the Emergency Board."

Passenger Officers to Convene at Murray Bay, Que.

The eighty-second annual meeting of the American Association of Passenger Traffic Officers will convene on the S. S. Tadoussac and at the Manoir Richelieu, Murray Bay, Que., on September 9 and 10. The program is as follows:

Committee reports.
Special meeting of Fraternal Society.
Train-Cab; Train-Auto; Credit Plan. Discussion to embrace experience with public acceptance of these plans.
New Coach-Pullman Cars. Advice as to public acceptance and traffic results of these new, experimental cars.
Joint Rail and Air Line Traffic Arrangements. (a) Optional honoring of tickets. (b) Joint tariffs.
Result of Red Cap Fee System. (a) Public reaction and effect on traffic. (b) Improvements in system.
The New Train. (The purpose of this discussion is to bring out a typical program covering inauguration of A New Train.) (a) Inception and traffic study. (b) Schedule. (c) Equipment preparation. (d) Color scheme, seating arrangements and interiors. (e) Train personnel including special features, such as passenger representatives, patrons' lists, crew uniforms, questionnaires, statistics, etc.; (f) Typical advertising program. (g) Judging the results.
A Round Table Forum reviewing passenger results during the past year in the several regions.
Election of Officers.
Nomination of the Executive Committee.
Appointment of Standing Committees.

Present Pension Tax Not Enough

Unless rail traffic and jobs turn upward, present tax won't cover payments

Rates under the Carriers Taxing Act would have to be increased from the present six per cent of the payroll to approximately 11.11 per cent if they are to maintain a fund adequate to support the retirement system set up in the Railroad Retirement Act, according to the first report of the Railroad Retirement Board's Actuarial Advisory Committee which has been submitted to Congress. The present tax, payable half by the employees and half by the carriers, is six per cent, and the law now provides for a gradual rise to a maximum of 7½ per cent in 1949.

Meanwhile, however, the Retirement Board recommends that no increase be made in the tax at the present time. In support of that recommendation it suggests that "there appear to be sound reasons for hesitating to accept at this time the initial experience as permanently valid." Moreover, the Board thinks that the government should contribute to the railroad retirement system an amount equal to "the additional contribution which would be made to the general old age and survivors' insurance system (provided in the Social Security Act) if the coverage under the railroad retirement system were included under the general system." Thus the Board's second recommendation that "Congress outline a definitive policy with respect to contributions from the general revenue." A third recommendation is "that any changes in the retirement system in the direction of liberalization should be accompanied immediately by increases in the taxes under the Carriers Taxing Act sufficient to cover the full cost of the changes on the basis of the factors indicated by the experience to date."

The report of the Actuarial Advisory Committee was made in accordance with a provision of the Retirement Act which calls for such a study at intervals of not longer than three years. There are three actuaries on the committee—two selected by the Board and the third by the Secretary of the Treasury. They are George B. Buck, Robert D. Holran and R. R. Reagh. The Retirement Acts' provision calling for the report stipulates that such report should include an estimate of the reduction in liabilities under Title II of the Social Security Act arising as a re-

(*Continued on page 345*)

7 Months N. O. I. Was $299,516,265

2.31 per cent return compares with $214,619,831 or 1.66 per cent last year

Class I railroads of the United States in the first seven months of 1940 had a net railway operating income of $299,516,265 which was at the annual rate of return of 2.31 per cent on their property investment, according to the Bureau of Railway Economics of the Association of American Railroads. In the first seven months of 1939, the net railway operating income was $214,619,831 or 1.66 per cent, and in the first seven months of 1930, it was $450,935,427 or 3.48 per cent. For the month of July, the net was $57,084,209 or 2.4 per cent compared with $48,996,611 or 2.07 per cent in July, 1939, and $81,470,731 or 3.55 per cent in July, 1930.

CLASS I RAILROADS—UNITED STATES

	1940	1939	1930
Month of July			
Total operating revenues	$366,077,563	$332,435,852	$451,786,925
Total operating expenses	262,018,951	241,962,092	327,955,974
Taxes	35,650,144	30,028,485	30,949,817
Net railway operating income	57,084,209	48,996,611	81,470,731
Operating ratio—per cent	71.57	72.78	72.59
Rate of return on property investment	2.40%	2.07%	3.55%
Seven Months Ended July 31			
Total operating revenues	$2,361,674,198	$2,136,562,408	$3,111,900,121
Total operating expenses	1,759,555,033	1,642,706,254	2,378,147,109
Taxes	226,469,225	202,137,766	208,450,360
Net railway operating income	299,516,265	214,619,831	450,935,427
Operating ratio—per cent	74.50	76.89	76.42
Rate of return on property investment	2.31%	1.66%	3.48%

Gross operating revenues for the seven months totaled $2,361,674,198 compared with $2,136,562,408 for the same period in 1939, and $3,111,900,121 in 1930—an increase of 10.5 per cent above the former, but a drop 24.1 per cent below 1930. Operating expenses for the seven months amounted to $1,759,555,033 compared with $1,642,706,254 for the same period in 1939, and $2,378,147,109 in 1930—7.1 per cent above the former, but 26 per cent below 1930.

Class I roads in the seven months paid $226,469,225 in taxes compared with $202,137,766 in the same period in 1939, and $208,450,360 in the same period in 1930. For July alone, the tax bill of the Class I roads amounted to $35,650,144, an increase of $5,621,659 or 18.7 per cent above July, 1939. Twenty-four Class I roads failed to earn expenses and taxes in this year's first seven months, of which seven were in the Eastern district, six in the Southern district and 11 in the Western district.

Gross for July amounted to $366,077,563 compared with $332,435,852 in July, 1939, and $451,786,925 in July, 1930. Operating expenses totaled $262,018,951 compared with $241,962,092 in the same month in 1939, and $327,955,974 in July, 1930.

Class I roads in the Eastern district for the seven months had a net railway operating income of $184,330,227, a return of 2.78 per cent; for the same period in 1939, their net was $127,505,366 or 1.93 per cent, while in 1930 it was $254,169,877 or 3.99 per cent. Gross of the Class I roads in the Eastern district for the seven months totaled $1,196,549,980, an increase of 15.2 per cent compared with 1939, but a decrease of 23.5 per cent compared with 1930. Operating expenses totaled $856,172,127, an increase of 10.5 per cent above the same period in 1939, but a decrease of 27.2 per cent under the first seven months of 1930. The July net in the Eastern district was $29,525,632 compared with $24,573,641 in July, 1939, and $38,379,153 in July, 1930.

The Southern-district net for the seven months was $37,449,428, or 2.14 per cent; for the same period in 1939, it amounted to $36,398,755 or 2.09 per cent, and for the same period in 1930 it was $48,370,223 or 2.61 per cent. Gross in the Southern district for the seven months amounted to $307,681,150, an increase of 7.4 per cent compared with the same period in 1939, but a decrease of 21.4 per cent under the same period in 1930; operating expenses totaled $235,389,070, an increase of 8.7 per cent above the same period in 1939, but a decrease of 24.3 per cent under 1930. For July alone, the net in the Southern district was $3,803,807 compared with $4,710,685 in July, 1939, and $5,429,199 in July, 1930.

Class I roads in the Western district for the seven months had a net of $77,736,610 or 1.7 per cent; for the same period in 1939, their net amounted to $50,715,710 or 1.12 per cent, while in 1930 it was $148,395,327 or 3.12 per cent. Gross in the Western district for the seven months amounted to $857,443,068, an increase of 5.7 per cent above the same period in 1939, but a decrease of 25.8 per cent below the same period in 1930; operating expenses totaled $667,993,836, an increase of 2.6 per cent compared with the same period in 1939, but a decrease of twenty-five per cent under the same period in 1930. For July alone, the Class I roads of the Western district had a net railway operating income of $23,754,770 compared with $19,712,285 in July, 1939, and $37,662,379 in July, 1930.

Railroad Fan Activities

The National Railway Historical Society will hold its annual convention at New Haven, Conn., on September 14 and 15. The program includes an inspection tour of the Cedar Hill yards of the New York, New Haven & Hartford, a model railroad show and a trip over the 77-mile "Canal line" of the New Haven from New Haven to Northampton, Mass., and return.

I C C Ties Truck Rates to Rails

Fixes minimum rates, not on truck costs but on what rail carriers charge

Giving the Trunk-Line territory motor carriers about what they asked in the way of protection against themselves, the Interstate Commerce Commission has prescribed for common-carrier truckers minimum rates based generally on the rail-rate structure for the transportation of property between points in New York, New Jersey, Pennsylvania, Delaware, Maryland, Virginia, West Virginia, and North Carolina. The decision by the commission's Division 5 is in Ex Parte No. MC-20, Trunk-Line Territory Motor Carrier Rates; it marks the fourth proceeding in which the commission has prescribed minimum rates for motor carriers operating within an extensive territory, the previous cases having involved rates in New England, in the Middle Atlantic States and in Central Territory.

Chairman Eastman, dissenting in part, called the majority's action "very drastic" in view of recent motor carrier financial reports which he interpreted as indicating that there was in this case no such "emergency" as was found to exist with respect to the situations covered in the other three proceedings. Commissioners Lee and Rogers comprised the Division 5 majority which adopted the prevailing opinion.

The proceeding was instituted by the commission upon its own motion after it had received from the Middle Atlantic States Motor Carrier Conference a petition seeking a general investigation "for the purpose of averting financial disaster to the carriers as the result of uncontrolled rate cutting." The Conference, "with the support of most of the non-Conference carriers," asked for a minimum rate order prescribing rates based generally on the rail rate structure; although there were various proposed departures from that general idea. Meanwhile a shippers' committee generally opposed the proposal of the Conference and asked for rates based on cost formulae. "The basic issue," the majority report said, "is that presented by the conflicting proposals of the Rate Committee (the Conference) and the Shippers' Committee."

Briefly stated, the Conference sought "a rate structure which will give reasonable flexibilities in meeting competition, so far as that may be done without peril to financial stability, by taking advantage of opportunities to charge rates which yield more than normal profits, but avoiding competitive rates which will result in loss rather than gain and by preventing other competitive rates from being made lower than necessity requires." If this theory is to be carried out, the report observes among other comments, the minimum rates set to accomplish the purpose are apt to become the maximum rates as well. The theory of the Shippers' Committee, on the other hand, "gives uppermost consideration to the injunction in section 202(a)

that we shall 'recognize and preserve the inherent advantages' of motor transportation, and thinks of these 'inherent advantages' in terms of cost of service." Thus the conclusion is reached that minimum rates "should never be prescribed except for the purpose of preventing rates from going perilously or unnecessarily below the cost of service, and a clear distinction is drawn between minimum and maximum reasonable rates."

Commenting on this theory and indicating its position that the Conference's view of the situation should be accepted at this time, the majority report had this to say:

"It is undeniably true that competition in transportation between different types of carriers has a tendency to increase the importance of cost of service as a factor in the making of rates. Because of this tendency, the present intensive and very persuasive competition of this character which now prevails is undermining the old railroad rate structure, and is rapidly bringing down many of the rail rates on high-grade commodities which were made high because of the weight formerly given to the value of service. This would appear to be the beginning of a process of evolution which if continued would eventually bring the country to a system of transportation rates based on cost of service alone. It may well be doubted whether this would be in the public interest since there would be a common rate for all commodities of a given weight density and of necessity the level of rates on low-grade basic materials, as well as the cheaper manufactured products, would have to be substantially increased.

"In any event such a system of rates could not be brought suddenly into being and a sudden change would be most disturbing to business conditions if it were practicable. Clearly, also, there are many difficulties and dangers in undertaking to base the rates of a single type of carrier primarily on cost of service, without at the same time undertaking to adjust the rates of competing carriers in the same way. This is particularly true of motor carriers in their competition with rail carriers, because of the traditional policy of the latter to cut rates so far as may be necessary to gain traffic from a competitor, on the assumption that some margin over so-called 'out-of-pocket' cost can be earned. To set a minimum limit for motor carrier rates based, not on 'out-of-pocket' cost, but on full allocated cost, without setting a similar limit for railroad competitors, would thus have unfair results."

From there the majority went on to recall the commission's action in the three previous proceedings, mentioned above; and to note that "very little dissatisfaction with the minimum rate orders above referred to has been observed and we believe that they were justified and have served a good purpose." And "we therefore believe that similar action should be taken here." Previously the commission had pointed out that in all three of the former proceedings many petitions for modifications of the orders have been filed; and thus the effect "has not been to freeze the rate structure, but it has been to discourage rate cutting and put it under supervision by the commission which is much closer than is practicable in the ordinary procedure under which changes in rates may be suspended for investigation." To line the present case up for the same treatment the commission issued a notice calling attention to the procedure for filing petitions for modification.

This idea of having a general minimum rate order followed by "hundreds of petitions for modifications" appeared to Chairman Eastman to amount to the substitution of a new and different procedure from that provided in the Interstate Commerce Act with respect to changes in rates. Under the procedure as outlined in the act, Mr. Eastman explains, the burden is not upon a motor carrier to justify proposed reductions in rates. Yet if a carrier wanted to cut a rate held by a minimum rate order, the burden would be on such carrier to justify the proposed modification of the order.

In his further comments, the I. C. C. chairman argued in support of his aforementioned view that there was no emergency warranting the "drastic" action taken by the majority. In his opinion the rates in most need of protection were, generally speaking, the commodity rates and those which are based on classification exceptions. Thus he was willing to approve the majority findings bearing on those two phases of rates in issue but he would go no further.

Traffic Distribution Can Increase Capacity of Present Highways

Congestion of traffic on the main highways of the country could easily be reduced 20 per cent through the adoption of better traffic distribution methods, the American Automobile Association has declared in a public statement.

"We have definitely gotten into the habit of making too much use of our main highways and too little use of our secondary roads. All the emphasis has been on traffic control with little or no attention given to intelligent traffic distribution. From the army maneuvers we have definitely learned that interference with civilian traffic was avoided by many of the convoys through the use of secondary routes. There can be no doubt at all that similar use of secondary roads by the nation's motorists would go a long way to relieve the congestion problem on our main highways."

The Automobile Association urges that secondary alternative highways be numbered and marked so that motorists can find them.

The Canadian Roads in July

The Canadian National's July gross was $22,395,032—up $6,831,384 over last year. Expenses at $18,222,446 were up $2,873,725. Net operating revenue, totaling $4,172,586, was larger by $3,957,659. For the seven months, gross was $136,076,583 (up $32,831,405); expenses $115,703,915 (up $12,168,247); and operating net $20,372,668 (as compared with an operating deficit of $290,490 in the first seven 1939 months).

The Canadian Pacific showed $15,303,417 as its July gross (up $3,646,014). Expenses were $12,898,586 (up $1,867,343). Net operating revenues were $2,404,831 (up $1,778,671). For seven months C. P. R. gross was $90,688,089 (increase, $17,222,842); expenses $75,647,252 (increase, $8,159,509); and net revenues $15,040,837 (increase, $9,063,333).

Bill Seeks to Prevent Merger of Roads Using Moffat Tunnel

Senator King, Democrat of Utah, has introduced "by request" S. 4309 "to prevent the consolidation of any railroad using the Moffat Tunnel with any other railroad using such tunnel."

Allegheny Board to Meet September 19

The Allegheny Regional Advisory Board will hold its 44th regular meeting at the Ohio hotel, Youngstown, Ohio, on September 19. J. F. Deasy, vice-president (operation), Pennsylvania, will be the chief guest speaker. Special reports will include that of the classification committee in connection with alleged abuses of classification rule No. 34; a program for the maximum utilization of freight cars by a shippers' committee and a progress report with respect to dunnage in closed cars.

Club Meetings

The Eastern Association of Car Service Officers will hold its regular fall meeting at the Pennsylvania hotel, New York, on September 26 at 10 a. m.

The Traffic Club of Newark, N. J., will hold its next regular meeting at the Robert Treat hotel on September 9. Dr. G. Lloyd Wilson, professor of transportation and public utilities, University of Pennsylvania, will discuss the subject "Should the Occupation of Traffic Manager Be Professionalized?" The club will hold its 28th annual outing at the Shackamaxon Country Club, Westfield, N. J., September 12.

The Traffic Club of Philadelphia, Pa., will hold its annual golf outing at the Manufacturers Golf and Country Club, Oreland, Pa., on September 19.

Equipment Depreciation Orders

Equipment depreciation rates for seven railroads, including the Akron, Canton & Youngstown and the Green Bay & Western, have been prescribed by the Interstate Commerce Commission in a new series of sub-orders and modifications of previous sub-orders in No. 15100, Depreciation Charges of Steam Railroad Companies. The composite percentages for all equipment, which are not prescribed rates, range from 2.78 per cent for the Manistique & Lake Superior to 6.42 per cent for the Hoosac Tunnel & Wilmington.

The A. C. & Y.'s composite percentage is 4.55, derived from prescribed rates as follows: Steam locomotives, 3.55 per cent; freight-train cars—owned, 8.01 per cent, leased, 3.68 per cent; passenger-train cars,

owned and leased, 3.83 per cent; work equipment, 3.61 per cent; miscellaneous equipment, 17.96 per cent. The Green Bay & Western's composite percentage is 3.77, its prescribed rates as follows: Steam locomotives, 3.85 per cent; freight-train cars, 3.54 per cent; passenger-train cars, 3.39 per cent; work equipment, 7.81 per cent; miscellaneous equipment, 15.65 per cent.

Transit Meeting Will Cover Bus and Interurban Problems

The American Transit Association will hold its 59th annual convention at White Sulphur Springs, W. Va., September 22 to 26, inclusive. Among the items on the program will be: a review of the activities of the Bus Equipment & Maintenance committee (luncheon session on September 23); clinics on driver training, bus lubrication and recent developments in new types of transmissions (2:30 to 4:30 p. m., September 25) and on brake balancing, fuels and fuel systems and Diesel engines (10 a. m. to 12 noon, September 26). Electric railway problems will be discussed at group meetings of the Engineering Association divisions at 3:30 p. m., September 23 and at 10 a. m., September 24. An interurban division luncheon will be held at 12:30 p. m. on September 25 at which a round table discussion of current problems will be held.

Railway Express Receives Goodrich Award at World's Fair

The B. F. Goodrich award "for distinguished public service" was tendered to the Railway Express Agency in the Goodrich Arena at the New York World's Fair on September 4. In an acceptance speech therefor, K. N. Merrit, general sales manager of the agency, told an audience of several thousand fair visitors that in his belief America's transportation systems could move an army of 1,000,000 men and food to feed them for a year from coast to coast in ten days, should such be made necessary by a war emergency. A specific item in such a job would be the transportation of 855,000 tons of food, as estimated by a food industry expert. In this total there would be such sizeable chunks of edibles as 11,250,000 chickens, 30,000,000 dozens of eggs and 45,000,000 tons of onions.

Many Jobless Railroaders Available for Defense Industries

More than 33,000 unemployed railroad workers are available for defense industries, and more than 25,000 of them are willing to bid for such a job anywhere in the country, according to the Railroad Retirement Board's interpretation of 73,000 returns received up to the end of July from a questionnaire which the Board sent out at the end of June to approximately 210,000 railroaders who had registered for benefits under the Railroad Unemployment Insurance Act during the fiscal year 1939-40. The foregoing, along with other information about the occupational skills of the men involved, is being forwarded by the Board to the National Defense Advisory Commission.

In making public the results of its survey, the Board emphasized how "the railroads themselves are important for defense purposes," continuing to assert that "there was of course no intention to shift employees needed by the railroads to other industries." Commenting on the returns, other than the 33,000 mentioned at the outset, the Board said that nearly all of the remaining 40,000 came from men who are regularly employed or who do not wish to be considered for a non-railroad job; and from those with occupational skills for which "there is no urgent demand at present in defense industries."

Roads Consider State-Initiated Rate Slashes for Anthracite

Secretary of Commerce Brown of the state of Pennsylvania met with representatives of seven anthracite carriers and the Anthracite Institute at a conference at Philadelphia, Pa., on September 5, at which time he asked the representatives of the roads to consider voluntary reductions on anthracite rates on hauls out of the state. He indicated that refusal to do so might lead to filing of a petition seeking such reductions with the Interstate Commerce Commission by the state or various shipping bodies within it.

Contemplated changes sought by the state are: (1) a reduction in rates on domestic sizes to eastern and central New York to meet motor truck competition and, (2) reduction in rates on steam (industrial) sizes to the Atlantic seaboard extending from eastern New York state to the Virginia border, including Maryland, Delaware, New Jersey and southeast New York.

Would Include Hours of Express Workers in Wage-Hour Law

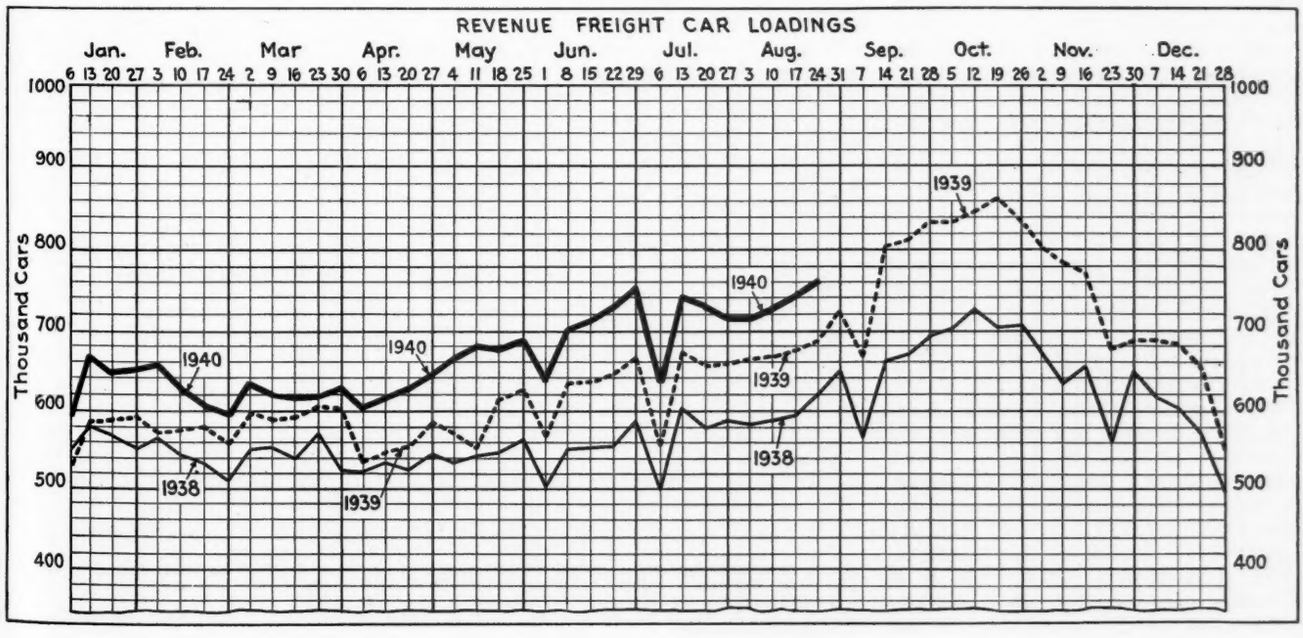
Identical joint resolutions have been introduced in the Senate and House of Representatives, respectively, by Senator Wheeler of Montana and Representative Crosser of Ohio, Democrats, to amend the Fair Labor Standards Act of 1938 so as to apply its maximum-hours provisions to employees of express companies. The amendment would accomplish its purpose by inserting the words "other than an employee of any express company" in that section of the wages and hours law which now exempts from the maximum-hours provisions "any employee of an employer subject to the provisions of Part I of the Interstate Commerce Act."

The Wheeler resolution is Senate Joint Resolution 293, while Representative Crosser's is House Joint Resolution 600.

Freight Car Loading

Carloading reports were so delayed by the Labor Day holiday that the Association of American Railroads was unable to release the total for the week ended August 31 at the time this issue went to press.

As reported in last week's issue, loading of revenue freight for the week ended August 24 totaled 761,002 cars, and the



summary for that week, as compiled by the Car Service Division, A. A. R., follows:

Revenue Freight Car Loading

Districts	For Week Ended Saturday, August 24 1940	1939	1938
Eastern	151,319	137,944	120,563
Allegheny	161,683	132,028	110,986
Pocahontas	51,942	49,438	46,201
Southern	101,177	95,558	91,650
Northwestern	138,048	115,884	97,993
Central Western	108,934	106,149	105,385
Southwestern	47,899	46,905	47,779
Total Western Districts	294,881	268,938	251,157
Total All Roads	761,002	683,906	620,557
Commodities			
Grain and grain products	44,310	43,789	45,387
Live stock	13,511	13,061	13,789
Coal	134,931	119,557	104,397
Coke	10,634	6,968	4,767
Forest products	38,038	31,954	30,884
Ore	69,983	49,743	25,517
Merchandise l.c.l.	151,190	154,172	151,000
Miscellaneous	298,405	264,662	244,816
August 24	761,002	683,906	620,557
August 17	743,121	669,793	597,884
August 10	726,976	661,023	589,568
August 3	718,430	656,553	584,062
July 27	718,489	655,531	588,697
Cumulative Total, 34 Weeks	22,681,676	20,467,311	18,895,644

In Canada.—Carloadings for the week ended August 24 totaled 59,400, as compared with 57,121 in the previous week and 54,384 a year ago, according to the compilation of the Dominion Bureau of Statistics.

Total for Canada:	Total Cars Loaded	Total Cars Rec'd from Connections
August 24, 1940	59,400	23,784
August 17, 1940	57,121	23,362
August 10, 1940	52,317	22,383
August 26, 1939	54,384	18,238
Cumulative Totals for Canada:		
August 24, 1940	1,742,957	827,536
August 26, 1939	1,492,779	685,439
August 27, 1938	1,499,038	684,256

P. M. Will Launch Ferry September 18

The City of Midland, the largest, most modern and one of the fastest carferries in the world, will be launched by the Pere Marquette on September 18. This $2,000,000 ship, now nearing completion in the yards of the Manitowoc Shipbuilding Company at Manitowoc, Wis., will be placed in service early in 1941 between Manitowoc and Ludington, Mich., where it will transport passengers, freight cars and highway vehicles across Lake Michigan. The contract for the construction of the City of Midland was awarded on November 22, 1939, and the keel was laid on March 21, 1940.

Helen A. Dow, 16-year-old daughter of Willard H. Dow, president and general manager of the Dow Chemical Company, Midland, Mich., will sponsor the ship, naming the vessel after her home town, an important industrial center on the line of the Pere Marquette.

The City of Midland, in outward appearance, will mark a radical departure from previous ships of her type. With single streamlined stack, she will embody the modern streamline principle in all her superstructure. The City of Midland's overall length is 406 ft., her length between perpendiculars, 388 ft. She is 25 ft. longer than her sister ships, the City of Flint and the City of Saginaw, the two largest carferries now operating on the Great Lakes.

The City of Midland will have a carrying capacity of 34 loaded freight cars, 50 automobiles and 376 passengers. Space for automobiles will be provided on the upper deck, and not on the car deck, as in the case of her sister ships, City of Flint and City of Saginaw, built in 1929, leaving the car deck free for freight cars. The ship will have four railroad tracks on her main deck.

Pension and Unemployment Insurance Data for Fiscal 1940

Benefit payments under the Railroad Retirement Act during the fiscal year ended June 30, 1940, totaled $114,025,141 or 6.4 per cent more than in the preceding fiscal year ended June 30, 1940, according to the latest issue of the Railroad Retirement Board's "Monthly Review." Meanwhile, also during fiscal 1940, benefit payments under the Railroad Unemployment Insurance Act amounting to $14,807,120 were certified to 160,735 out of 210,823 applicants.

By June 30, 1940, 124,055 employees had retired and received annuities under the Retirement Act. In addition 48,500 former carrier pensioners, 2,453 survivor annuitants, 4,607 death benefit annuitants and 29,393 lump-sum death beneficiaries had received benefits under the act.

New certifications of employee annuities during 1939-40 exceeded the number of terminations by death by about 3 to 1, a net of 15,916 being added to the employee annuities in force. As of June 30, 1940, there were 106,078 employee annuities in force with a total monthly amount payable of $6,953,664. For all employee annuities in force at the end of June including those still subject to recertification, the average monthly payment was $65.55.

There were 35,146 former private pensioners on the rolls of the Board at the end of fiscal 1940. The total monthly amount payable to them amounted to $2,061,717. As of June 30, 1940, the average monthly pension in force amounted to $58.66.

The reserve in the Railroad Retirement account, invested in 3 per cent Treasury notes, totaled $79,400,000 at the end of June, 1940. This was $12,200,000 more than the investment at the beginning of the fiscal year. Collections under the Carriers Taxing Act during 1939-40 totaled $120,966,719, an increase of 10.7 per cent over the preceding fiscal year. "A small part of the increase in collections," says the Review, "is the result of the higher tax rate applicable to payrolls for the last quarter of the fiscal year, but the principal part of the increase is due to the improvement in railroad employment."

With respect to the unemployment insurance program, the Review notes that claims in June continued a downward

Putting 'Em Through the Wringer

Debts of 25 railroads undergoing reorganization would be reduced by $2,098,957,941—from $3,708,484,169 to $1,609,526,228—while annual fixed charges would drop $92,010,913—from $131,462,982 to $39,452,069—if reorganization plans approved by the Interstate Commerce Commission or set up in examiners' reports become effective. These figures (as of July 31, 1940) are shown in a tabulation which has been prepared by the commission's Bureau of Finance, covering railroads in reorganization proceedings before the commission under section 77 of the Bankruptcy Act.

The table showing the change in debt and annual fixed charges is published herewith.

Change in Debt and Annual Fixed Charges Under Plans of Reorganization Approved by the Commission, or Proposed by Examiners, for Railroads in Reorganization Proceedings Before the Commission

As of July 31, 1940

	Debt[a]		Annual Fixed Charges	
	Before Reorganization[b]	After Reorganization	Before Reorganization	After Reorganization
Plans Approved by Commission				
Akron, C. & Y.	*$13,312,581	$3,997,500	$364,956	$170,965
Boston & Providence	2,338,186	.....[c]	.....	.....
Chicago & E. I.	67,020,834	28,071,500	2,248,798	662,869
Chicago & North Western	431,390,104	222,078,460	16,549,740	3,382,079
Chicago Great Western	48,050,452	27,190,268	1,898,783	849,000
Chicago, M., St. P. & P.	*626,926,331	224,037,950	14,954,451	4,269,654
Chicago, S. S. & S. B.	5,604,447	1,553,800	334,117	106,503
Copper Range	2,280,000	.....	107,975	600
Denver & R. G. W.	*171,934,879	76,232,510	6,524,415	1,278,539
Erie (Incl. Chicago & Erie)	304,981,178	191,277,279	13,593,536	7,520,226
Kansas City, K. V. & W.	717,062	31,895	25,676	1,500
Louisiana & N. W.	2,319,394	968,980	112,413	34,822
Missouri Pacific	*660,897,056	308,221,500	24,770,052	7,286,804
New York, N. H. & H.	*390,447,466	230,352,566[c]	13,521,947	6,353,899
Oregon, P. & E.	914,674	.....	16,501	.....
Reader	43,400	38,400	2,595	2,400
St. Louis-San Francisco	*373,727,922	116,071,204	12,613,106	3,000,117
Savannah & Atl.	8,106,805	1,388,000	251,968	81,498
Spokane Int.	*7,996,994	2,846,400	273,155	.....
Western Pacific	95,698,299	33,969,125	3,634,750	494,202
Examiners' Proposed Plans				
Alabama, T. & N.	5,634,270	1,262,870	243,871	50,515
Chicago, R. I. & P.	*399,132,374	104,356,771	15,771,878	2,575,547
Fort Dodge, Des M. & S.	9,085,547	1,695,000	282,693	.....
St. Louis Southwestern	*76,820,978	32,725,250	3,248,668	1,330,330
Yosemite Valley	3,102,936	1,159,000	116,938	.....
Total	3,708,484,169	1,609,526,228	131,462,982	39,452,069

* Includes obligations of subsidiary companies, as shown in the plan approved or recommended.
[a] Does not reflect current operating obligations to be assumed by the new company.
[b] Includes unpaid interest, dividends, etc.
[c] N. Y. N. H. & H. includes $4,506,733 of bonds to be issued in acquisition of the Boston & Providence properties.

trend from the level of receipts in preceding months, being about 16 per cent below the weekly average in May and 33 per cent below the weekly average in April. The average number certified for benefit payments was 15,387 per week with an average of $13.87 per certification, about 2 per cent below the average benefit for May.

Reparation on Rates Exceeding Ex Parte 115 Authorized

The Interstate Commerce Commission, Division 2, has found that rates on bituminous coal from mines in West Virginia, Virginia, Pennsylvania and Kentucky to destinations in Wisconsin, established on November 15, 1937, in purported compliance with the Ex Parte 115 general rate-increase decision are in excess of those authorized, and unreasonable. Complainants and intervenors in the proceeding (No. 28317, Wisconsin Retail Lumbermen's Association et al. v. Ann Arbor Railroad Company et al.) were found entitled to reparation.

The decision involved passing upon the proper application of the Ex Parte 115 increases to combination through rates constructed by the use of proportionals from the origin districts over car-ferry routes to West-bank Lake Michigan ports, and local rates from such ports to final destination. Under the Ex Parte 115 decision, increased rates on bituminous coal were authorized on two scales—Scale No. 1 provided for an increase of 10 cents per ton when the existing rate was over $1, and Scale No. 2, approved for application on traffic within and to the West, provided for an increase of 15 cents per ton where the rate was over $2, with the exception that Scale No. 1 would apply to the rates to Milwaukee, Wisc., Racine and Kenosha, and Waukegan, Ill., and North Chicago.

The proportional rate factors involved in the complaint all exceed $2; and in publishing the increased rates the railroads subjected each factor to the maximum increase of 10 cents per net ton authorized under Scale 1. Complainants contended that 15 cents per net ton was the maximum increase authorized for application within and to the West, and they alleged further that they were disadvantaged by the fact that joint through rates from the same origin groups to certain destinations in Southern Wisconsin had been increased only 15 cents per ton. The commission agreed with the complainants.

High Water Blocks South Jersey Lines on Sept. 1

The Pennsylvania - Reading Seashore Lines suffered an almost complete blockade of service for more than eight hours on Sunday, September 1, when southern New Jersey was whip-lashed by a hurricane traveling up the coast in its final attack on the land before turning out to sea. The high rains which the big wind brought with it, added to a week of almost incessant wet weather, enlarged streams to unprecedented size, washed out bridges and fills and inundated tracks and stations in low-lying areas at a score of points on the P.-R. lines in the middle of the Labor Day week-end when the road carries its heaviest traffic for the year.

Three excursion trains carrying some 970 passengers were marooned at Sewell on the old West Jersey & Seashore southern route between Camden and Wildwood, trapped by a 20 ft. washout to the south and a severed fill to the north. Finally, after about six hours, relief buses and trains carried the passengers back to Philadelphia or on to shore points as they desired. Largest washouts affecting the main line were at Kirkwood, Clementon and Winslow junction, which tied up packed trains for hours. That at Kirkwood was 50 ft. long and 10 ft. deep, and at all three locations high water carried away sand and gravel fill almost as soon as it was dumped. The single-track line of the Pennsylvania across the state to Bayhead junction was also put out of commission for several days when a steel bridge over Rancocas creek near Mount Holly was carried into the stream.

Passenger trains reported washouts starting about 8 a. m. and the last train to reach Atlantic City arrived at 7:25 a. m. The road formally annulled all schedules effective 10:35 a. m. First service through from Philadelphia or Camden to Atlantic City departed at 4:30 p. m. and was routed over secondary trackage. In the meantime passengers on a number of stalled trains were transferred to buses which reached their destinations over circuitous routes selected by scout cars. By special arrangement railroad tickets were accepted by the major bus operator in the territory.

Service on the Central of New Jersey between New York and Atlantic City was not affected by the floods and the Pennsylvania routed two of its New York-shore trains via this route.

Present Pension Tax Not Enough

(*Continued from page 340*)

sult of the maintenance of the Railroad Retirement Act. Because of amendments to the Social Security Act the actuaries were unable to carry out this phase of their assignment, and they made no attempt to guess at the answer.

The statement of the Actuarial Advisory Committee (its survey being as of December 31, 1938) says that the present value of liabilities on account of employees and retired workers is, in round figures, $4,462,400,000. To cover this there were funds amounting to $75,700,000 in hand, which leaves a balance of $4,386,700,000 as the liabilities to be covered by future contributions. Then comes the aforementioned statement that the present tax rates are inadequate, and that an 11.11 per cent rate is needed to finance the liabilities from now on.

"In the opinion of the Actuarial Advisory Committee," the statement continues, "the important result of the valuation to the employees of the railroads, the railroads themselves and the general public, is the statement of the contributions needed to support the benefits, because it shows that the rates set in the tax act are insufficient and that some additional source of revenue is necessary if the prescribed benefits are to be maintained.

"The Actuarial Advisory Committee does not take a position on the question of the method to be followed in increasing the rates of payment by the railroads and the employees thereof to those indicated by this valuation to be required. While a first valuation gives the best indication available at the outset of the probable future cost, it is true that the basic assumptions as to mortality and service experience have not been tested by actual experience under the fund and may be subject to adjustments in future years. Inasmuch as the act provides for an increase in the rate of tax for a number of years in the future, there may be some question as to the advisability of making an immediate change in the current rate of tax until after the next valuation, although an immediate increase in the present rate or in the future increases in rates as provided in the law would be the more conservative course to follow."

Meanwhile the Retirement Board had got in its aforementioned recommendation against any change in the tax at present. In leading up to that recommendation the Board reviewed the bases of the actuarial estimates upon which the pension system was originally set up. It found that there were certain errors in the basic data, including the information as to age and service distributions collected by the federal co-ordinator of transportation. Next the average payroll for 1937, 1938 and 1939 was $2,108,000,000 as compared with the estimate of $2,200,000,000; but "more serious" has been the fact that the average age of retirement has been less than 66, rather than 67½ as estimated. Finally, the mortality rate among persons retired on account of disability has been lower than expected.

The finding of the actuaries that an 11.11 per cent tax is needed raises two questions, in the opinion of the Board. First, whether the initial experience is likely to be typical of that over a long run of years; and second, whether the taxes should be raised to the full amount required, in the event the initial experience proves typical. To the first question the Board suggests a negative answer. It thinks the pension system has thus far had bad breaks from the standpoint of retirements. This was due to such factors as the depression which caused many oldsters to retire because their pension was more attractive than part-time work, or because of pressure from younger men who had been laid off. Next, the private pension systems of some railroads had been curtailed during the depression years, and many elderly employees of such carriers hung on to await the inauguration of the federal pension system; also, many applied for pensions who were suffering from "substantial disabilities" but had been retained in light jobs.

"The effect of this accumulation of delayed retirements," the Board says, "affected the picture to an overwhelming degree in 1937; and there is no reason to suppose that its effects have been completed even yet. That, however, the in-

itial rates were much larger than they have been subsequently is clearly indicated by the studies made by the actuaries."

Looking to the future the Board observes that "to a considerable degree the experience under a retirement system will reflect general business conditions." In other words, as railroad payrolls increase so also do collections under Carriers Taxing Act. Also, retirements will drop, a result which will come about "both because older employees will not wish to retire, and because there will be a diminution in the pressure on them exercised by younger men." And the Board thinks there are "substantial reasons to suppose that we are entering a period of expanded domestic business." In the latter connection it cites the rearmament program which will be reflected in railway traffic; and the idea that the railroads, which are "an essential and highly important part of the national defense," may well find it desirable "to enter into a program of rehabilitation which will require substantial employment itself."

"With retirements falling and payrolls and payroll tax receipts rising, the balance between the receipts and disbursements of the retirement system will change for the better," says the Board as it leads up to its aforementioned recommendations.

Meetings and Conventions

The following list gives names of secretaries, dates of next or regular meetings and places of meetings:

AIR BRAKE ASSOCIATION.—R. P. Ives, 350 Fifth Ave., New York, N. Y.

ALLIED RAILWAY SUPPLY ASSOCIATION.—J. F. Gettrust, P. O. Box 5522, Chicago, Ill. Annual meeting, October 22-25, 1940, Hotel Sherman, Chicago, Ill.

AMERICAN ASSOCIATION OF FREIGHT TRAFFIC OFFICERS.—W. R. Curtis, F. T. R. M. & O. R. R., 327 S. La Salle St., Chicago, Ill.

AMERICAN ASSOCIATION OF GENERAL BAGGAGE AGENTS.—E. P. Soebbing, 1431 Railway Exchange Bldg., St. Louis, Mo. Annual meeting, October 22-24, 1940, Hollywood Beach, Fla.

AMERICAN ASSOCIATION OF PASSENGER TRAFFIC OFFICERS.—B. D. Branch, C. R. R. of N. J., 143 Liberty St., New York, N. Y. Annual meeting, September 9-10, 1940. September 9, aboard Canada S. S. Lines' Steamer Tadoussac; September 10, at Manoir Richelieu, Murray Bay, Quebec, Canada.

AMERICAN ASSOCIATION OF RAILROAD SUPERINTENDENTS.—F. O. Whiteman, Room 332, Dearborn Station, Chicago, Ill. Annual meeting, June 3-5, 1941, Chicago, Ill.

AMERICAN ASSOCIATION OF RAILWAY ADVERTISING AGENTS.—E. A. Abbott, Poole Bros., Inc., 85 W. Harrison St., Chicago, Ill.

AMERICAN ASSOCIATION OF SUPERINTENDENTS OF DINING CARS.—F. R. Borger, C., I. & L. Ry., 836 S. Federal St., Chicago, Ill. Annual meeting, October 7-9, 1940, Waldorf-Astoria, New York, N. Y.

AMERICAN RAILWAY BRIDGE AND BUILDING ASSOCIATION.—F. O. Whiteman, Room 332, Dearborn Station, Chicago, Ill. Annual meeting, October 15-17, 1940, Hotel Stevens, Chicago, Ill.

AMERICAN RAILWAY CAR INSTITUTE.—W. C. Tabbert, 19 Rector St., New York, N. Y.

AMERICAN RAILWAY DEVELOPMENT ASSOCIATION.—E. G. Reed, Union Pacific R. R., 1416 Dodge St., Omaha, Neb. Next meeting, October 24-26, 1940, Washington, D. C.

AMERICAN RAILWAY ENGINEERING ASSOCIATION.—Works in cooperation with the Association of American Railroads, Engineering Division.—W. S. Lacher, 59 E. Van Buren St., Chicago, Ill. Annual meeting, March 11-13, 1941, Palmer House, Chicago, Ill.

AMERICAN RAILWAY MAGAZINE EDITORS' ASSOCIATION.—M. W. Jones, Baltimore & Ohio R. R., 1105 B. & O. R. R. Bldg., Baltimore, Md. Annual meeting, October, 1940, De Soto Hotel, Savannah, Ga.

AMERICAN RAILWAY TOOL FOREMEN'S ASSOCIATION.—G. G. Macina, C., M., St. P. & P. R. R., 11402 Calumet Ave., Chicago, Ill.

AMERICAN SHORT LINE RAILROAD ASSOCIATION.—J. H. Huntt, Tower Bldg., Washington, D. C. Annual meeting, November 11-12, 1940, Hotel Morrison, Chicago, Ill.

AMERICAN SOCIETY OF MECHANICAL ENGINEERS.—C. E. Davies, 29 W. 39 St., New York, N. Y.
Annual meeting, December 2-6, 1940, New York, N. Y.
Railroad Division—C. L. Combes, *Railway Age*, 30 Church St., New York, N. Y.

AMERICAN TRANSIT ASSOCIATION.—Guy C. Hecker, 292 Madison Ave., New York, N. Y. Annual meeting, September 22-26, 1940, The Greenbrier, White Sulphur Springs, W. Va.

AMERICAN WOOD PRESERVERS' ASSOCIATION.—H. L. Dawson, 1427 Eye St., N. W., Washington, D. C. Annual meeting, February 4-6, 1941, Brown Hotel, Louisville, Ky.

ASSOCIATION OF AMERICAN RAILROADS.—H. J. Forster, Transportation Bldg., Washington, D. C.
Operations and Maintenance Department.—Charles H. Buford, Vice-President, Transportation Bldg., Washington, D. C.
Operating-Transportation Division. — L. R. Knott, 59 E. Van Buren St., Chicago, Ill.
Operating Section.—J. C. Caviston, 30 Vesey St., New York, N. Y.
Transportation Section.—L. R. Knott, 59 E. Van Buren St., Chicago, Ill.
Fire Protection and Insurance Section.—W. F. Steffens, New York Central, Room 3317, 230 Park Avenue, New York, N. Y. Annual meeting, October 15-16, 1940, Congress Hotel, Chicago, Ill.
Freight Station Section.—L. R. Knott, 59 E. Van Buren St., Chicago, Ill.
Medical and Surgical Section.—J. C. Caviston, 30 Vesey St., New York, N. Y.
Protective Section.—J. C. Caviston, 30 Vesey St., New York, N. Y.
Safety Section. — J. C. Caviston, 30 Vesey St., New York, N. Y.
Telegraph and Telephone Section. — W. A. Fairbanks, 30 Vesey St., New York, N. Y. Annual meeting, September 10-12, 1940, Chateau Laurier, Ottawa, Ontario, Canada.
Engineering Division.—W. S. Lacher, 59 E. Van Buren St., Chicago, Ill. Annual meeting, March 11-13, 1941, Palmer House, Chicago, Ill.
Construction and Maintenance Section.—W. S. Lacher, 59 E. Van Buren St., Chicago, Ill. Annual meeting, March 11-13, 1941, Palmer House, Chicago, Ill.
Electrical Section.—W. S. Lacher, 59 E. Van Buren St., Chicago, Ill. Annual meeting, October 29, 1940, Hotel Sherman, Chicago, Ill.
Signal Section.—R. H. C. Balliet, 30 Vesey St., New York, N. Y. Annual meeting, October 8-10, 1940, Wardman Park Hotel, Washington, D. C.
Mechanical Division.—V. R. Hawthorne, 59 E. Van Buren St., Chicago, Ill.
Electrical Section.—J. A. Andreucetti, 59 E. Van Buren St., Chicago, Ill. Annual meeting, October 30, 1940, Hotel Sherman, Chicago, Ill.
Purchases and Stores Division.—W. J. Farrell, 30 Vesey St., New York, N. Y.
Freight Claim Division.—Lewis Pilcher, 59 E. Van Buren St., Chicago, Ill.
Motor Transport Division.—George M. Campbell, Transportation Bldg., Washington, D. C.
Car-Service Division.—E. W. Coughlin, Transportation Bldg., Washington, D. C.
Finance, Accounting, Taxation and Valuation Department.—E. H. Bunnell, Vice-President, Transportation Bldg., Washington, D. C.
Accounting Division. — E. R. Ford, Transportation Bldg., Washington, D. C. Annual meeting, 1941, Denver, Colo.
Treasury Division.—E. R. Ford, Transportation Bldg., Washington, D. C. Annual meeting, October 10-11, 1940, Roanoke, Va.
Traffic Department. — A. F. Cleveland, Vice-President, Transportation Bldg., Washington, D. C.

ASSOCIATION OF RAILWAY CLAIM AGENTS.—F. L. Johnson, Claim Agent, Alton R. R., 340 W. Harrison St., Chicago, Ill. Annual meeting, 1941, Denver, Colo.

BRIDGE AND BUILDING SUPPLY MEN'S ASSOCIATION.—W. S. Carlisle, National Lead Company, 900 W. 18th St., Chicago, Ill. Meets with American Railway Bridge and Building Association.

CANADIAN RAILWAY CLUB.—C. R. Crook, 4415 Marcil Ave., N. D. G., Montreal, Que. Regular meetings, second Monday of each month except June, July and August, Windsor Hotel, Montreal, Que.

CAR DEPARTMENT ASSOCIATION OF ST. LOUIS, MO.—J. J. Sheehan, 1101 Missouri Pacific Bldg., St. Louis, Mo. Regular meetings, third Tuesday of each month, except June, July and August, Hotel De Soto, St. Louis, Mo.

CAR DEPARTMENT OFFICERS' ASSOCIATION.—Frank Kartheiser, Chief Clerk, Mechanical Dept., C. B. & Q., Chicago, Ill. Annual meeting, October 22-25, 1940, Hotel Sherman, Chicago, Ill.

CAR FOREMEN'S ASSOCIATION OF CHICAGO.—G. K. Oliver, 8238 So. Campbell Ave., Chicago, Ill. Regular meetings, second Monday of each month, except June, July and August, La Salle Hotel, Chicago, Ill.

CENTRAL RAILWAY CLUB OF BUFFALO.—Mrs. M. D. Reed, 1817 Hotel Statler, McKinley Square, Buffalo, N. Y. Regular meetings, second Thursday of each month, except June, July and August, Hotel Statler, Buffalo, N. Y.

EASTERN ASSOCIATION OF CAR SERVICE OFFICERS.—J. T. Bougher, 424 W. 33rd St. (11th floor), New York, N. Y. Annual meeting, September 26, 1940.

INTERNATIONAL RAILWAY GENERAL FOREMEN'S ASSOCIATION (See Locomotive Maintenance Officers' Association).

INTERNATIONAL RAILWAY MASTER BLACKSMITHS' ASSOCIATION.—W. J. Mayer, Michigan Central R. R., Detroit, Mich.

LOCOMOTIVE MAINTENANCE OFFICERS' ASSOCIATION.—J. E. Goodwin, Gen. Foreman, Loco. Dept., Missouri Pacific R. R., No. Little Rock, (P. O. Little Rock), Ark. Annual meeting, October 22-25, 1940, Hotel Sherman, Chicago, Ill.

MASTER BOILER MAKERS' ASSOCIATION.—A. F. Stiglmeier, 29 Parkwood St., Albany, N. Y. Annual meeting, October 22-25, 1940, Hotel Sherman, Chicago, Ill.

NATIONAL ASSOCIATION OF RAILROAD AND UTILITIES COMMISSIONERS.—Clyde S. Bailey, New Post Office Bldg., Washington, D. C. Annual meeting, December 10-12, 1940, Miami, Fla.

NATIONAL RAILWAY APPLIANCES ASSOCIATION.—C. H. White, Room 1826, 208 S. La Salle St., Chicago, Ill.

NEW ENGLAND RAILROAD CLUB.—W. E. Cade, Jr., 683 Atlantic Ave., Boston, Mass. Regular meetings, second Tuesday of each month, except June, July, August and September, Hotel Touraine, Boston, Mass.

NEW YORK RAILROAD CLUB.—D. W. Pye, 30 Church St., New York, N. Y. Regular meetings, third Thursday of each month, except June, July, August, September and December, 29 W. 39th St., New York, N. Y.

PACIFIC RAILWAY CLUB. — William S. Wollner, P. O. Box 3275, San Francisco, Cal. Regular meetings, second Thursday of each alternate month, at Palace Hotel, San Francisco, and second Friday of each alternate month at Hotel Hayward, Los Angeles.

RAILWAY BUSINESS ASSOCIATION.—P. H. Middleton, First National Bank Bldg., Chicago, Ill. Annual meeting, November, 1940, Hotel Commodore, New York, N. Y.

RAILWAY CLUB OF PITTSBURGH.—J. D. Conway, 1647 Oliver Bldg., Pittsburgh, Pa. Regular meetings, fourth Thursday of each month, except June, July and August, Fort Pitt Hotel, Pittsburgh, Pa.

RAILWAY ELECTRIC SUPPLY MANUFACTURERS' ASSOCIATION.—J. McC. Price Allen-Bradley Company, 600 W. Jackson Blvd., Chicago, Ill.

RAILWAY FUEL AND TRAVELING ENGINEERS' ASSOCIATION.—T. Duff Smith, Room 811, Utilities Bldg., 327 S. La Salle St., Chicago, Ill. Annual meeting, October 22-25, 1940, Hotel Sherman, Chicago, Ill.

RAILWAY SUPPLY MANUFACTURERS' ASSOCIATION.—J. D. Conway, 1647 Oliver Bldg., Pittsburgh, Pa.

RAILWAY TELEGRAPH AND TELEPHONE APPLIANCE ASSOCIATION.—G. A. Nelson, Waterbury Battery Company, 30 Church St., New York, N. Y. Meets with Telegraph and Telephone section of A. A. R.

RAILWAY TIE ASSOCIATION.—Roy M. Edmonds, 903 Syndicate Trust Bldg., St. Louis, Mo.

ROADMASTERS' AND MAINTENANCE OF WAY ASSOCIATION.—F. O. Whiteman, Room 332, Dearborn Station, Chicago, Ill. Annual meeting, September 10-12, 1940, Hotel Stevens, Chicago, Ill.

SIGNAL APPLIANCE ASSOCIATION.—G. A. Nelson, Waterbury Battery Company, 30 Church St., New York, N. Y. Meets with A. A. R., Signal Section.

SOUTHERN AND SOUTHWESTERN RAILWAY CLUB.—A. T. Miller, 4 Hunter St., S. E. Atlanta, Ga. Regular meetings, third Thursday in January, March, May, July, September and November, Ansley Hotel, Atlanta, Ga.

SOUTHERN ASSOCIATION OF CAR SERVICE OFFICERS.—D. W. Brantley, C. of Ga. Ry., Savannah, Ga.

TORONTO RAILWAY CLUB.—D. M. George, P. O. Box 8, Terminal "A," Toronto, Ont. Regular meetings, fourth Monday of each month, except June, July and August, Royal York Hotel, Toronto, Ont.

TRACK SUPPLY ASSOCIATION.—Lewis Thomas O. and C. Company, 59 E. Van Buren St., Chicago, Ill. Exhibit in connection with Roadmasters' and Maintenance of Way Association Convention, September 9-12, 1940, Hotel Stevens, Chicago, Ill.

UNITED ASSOCIATIONS OF RAILROAD VETERANS.—

Roy E. Collins, 112 Hatfield Place, Port Richmond, Staten Island, N. Y. Annual meeting, October 12-13, 1940, Hotel Buena Vista, Biloxi, Miss.

WESTERN RAILWAY CLUB.—W. L. Fox (Executive Secretary), Room 822, 310 South Michigan Ave., Chicago, Ill. Regular meetings, third Monday of each month, except June, July, August and September, Hotel Sherman, Chicago, Ill.

Equipment and Supplies

Big August Sales Up 1940 Record

Month's loco. orders largest since April '37; big gain over last year

Domestic orders for railroad equipment in the United States as reported in issues of the *Railway Age* during August totaled in volume 65 locomotives (30 steam and 35 Diesel-electric); 7,645 freight cars and 102 passenger-train cars. Of these totals the locomotive figure is the largest for any single month since April, 1937, the freight car total greater than any month since November, 1939, and the passenger-train car than any since December, 1939. They compare with 5 locomotives and 315 freight cars ordered in August of last year; no passenger-train cars were ordered in that month.

The August figures bring totals for the year thus far to 301 locomotives; 24,076 freight cars and 161 passenger-train cars, as compared with 161 locomotives; 9,392 freight cars and 174 passenger-train cars ordered in the corresponding eight months of 1939. More specifically, the 1940 locomotive total is 87 per cent in excess of that of 1939's comparative period, while the freight car total is 2½ times that of 1939 or greater by some 156 per cent. The passenger-car total falls somewhat short of the 1939 record, due to the fact that the previous months of 1940 brought sub-normal buying in this field. As a matter of fact 72 per cent more passenger-train cars were ordered in August than in all of the previous seven months of the year as a whole.

The export market brought an order for 22 rail-motor cars and 13 passenger-coach trailers to a United States builder during August.

The carriers ordered 7,350 tons of rail during August, which brings the total for the year thus far to 139,742 tons, as compared with 532,833 tons for the corresponding period of 1939. In addition to the orders reported above, there were, as of September 4, inquiries outstanding for, or contemplated purchases of, 54 locomotives; 7,231 freight cars and 142 passenger-train cars.

LOCOMOTIVES

THE CHICAGO, MILWAUKEE, ST. PAUL & PACIFIC has ordered 18 Diesel-electric locomotives, placing 3 of 1,000 hp. and 9 of 600 hp. with the Electro-Motive Corporation; 4 of 1,000 hp. with the American Locomotive Company and 2 of 1,000 hp. with the Baldwin Locomotive Works. These are in addition to the 18 ordered last March.

THE CHICAGO, ST. PAUL, MINNEAPOLIS & OMAHA has ordered three Diesel-electric locomotives, placing two units with the Electro-Motive Corporation and one with the American Locomotive Company.

FREIGHT CARS

THE CHICAGO, INDIANAPOLIS & LOUISVILLE has ordered 100 50-ton hopper cars from the Pullman Standard Car Manufacturing Company. These are in addition to the 100 reported in the *Railway Age* of August 24.

THE CANADIAN PACIFIC has ordered 100 75-ton, low-side drop-end steel gondola cars from the Canadian Car and Foundry Co. and 100 similar units and 300 50-ton hopper cars from the National Steel Car Company.

PASSENGER CARS

THE CANADIAN PACIFIC has ordered 10 baggage-express cars, 84 ft. long, from the Canadian Car and Foundry Co. In addition it has ordered 25 steel frames from the same company for first class coaches which it will complete at its Angus shops.

IRON AND STEEL

THE WABASH has ordered 5,000 tons of rails. The reported distribution, which has not been confirmed by the railroad, is as follows: 2,750 tons to the Carnegie-Illinois Steel Corporation and 1,125 tons each to the Bethlehem Steel Company and the Inland Steel Company.

THE ILLINOIS CENTRAL, according to a preliminary estimate, expects to purchase 26,500 tons of rails within the next 90 days. The allocation will be approximately as follows: 6,625 tons to the Carnegie-Illinois Steel Corporation, 13,250 tons to the Tennessee Coal, Iron and Railroad Company and 6,625 tons to the Inland Steel Company.

SIGNALING

THE TERMINAL RAILROAD ASSOCIATION OF ST. LOUIS has placed an order with the Union Switch & Signal Company for the materials and the installation of an interlocking machine and associated apparatus to replace the equipment destroyed by a fire in Tower No. 1 in the St. Louis Terminal on July 22, as reported in the *Railway Age* of August 3, page 171. Included is a 303-lever frame Model-14 electro-pneumatic interlocking machine; an illuminated track model which will extend practically the entire length of the machine; and a relay rack consisting of sections, which will be completely wired at the factory and equipped with plug-in relays. The main terminal boards, to which all wires from the outside will be brought and terminated, will also be completely assembled at the factory.

The Union Company's engineers are cooperating with the architects of the new building to the end that the new fireproof tower will be provided with the most suit-

Domestic Equipment Orders Reported in Issues of The Railway Age in August 1940

LOCOMOTIVES

Date	*Name of Company*	*No.*	*Type*	*Builder*
Aug. 10	Chicago & North Western-Union Pacific-Southern Pacific	1	Diesel-electric	Electro-Motive Corp.
Aug. 10	Chicago & North Western-Union Pacific	1	Diesel-electric	Electro-Motive Corp.
Aug. 10	Southern Pacific	20	4-8-4	Lima Locomotive Works
Aug. 10	Atlantic Coast Line	18	Diesel-electric	Electro-Motive Corp.
Aug. 17	Akron, Canton & Youngstown	2	2-8-2	Lima Locomotive Works
Aug. 31	Duluth, Missabe & Iron Range	8	Articulated	Baldwin Locomotive Works
Aug. 31	Elgin, Joliet & Eastern	8	Diesel-electric Sw.	Electro-Motive Corp.
		4	Diesel-electric Sw.	American Locomotive Co.
		3	Diesel-electric Sw.	Baldwin Locomotive Works

FREIGHT CARS

Aug. 3	Norfolk & Western	500	Box	Ralston Steel Car
Aug. 3	Chicago & North Western	60	Cov. Hopper	General American
Aug. 10	Chicago, Milwaukee, St. Paul & Pacific	25	Caboose	Company Shops
		2,000	Box	Company Shops
Aug. 10	Chicago, Burlington & Quincy	1,000	Box	Company Shops
Aug. 17	Southern Pacific	500	Box	General American
		500	Box	Pressed Steel Car
		500	Box	Bethlehem Steel Co.
		500	Automobile	Mt. Vernon Car
		350	Hopper	American Car & Foundry
		125	Flat	Company Shops
		15	Gondola	Company Shops
		50	Caboose	Company Shops
Aug. 24	Union Pacific	100	Cement	General American
Aug. 24	Louisville & Nashville	100	Automobile	Pullman-Standard
Aug. 24	Chicago, Indianapolis & Louisville	100	Hopper	Pullman-Standard
Aug. 24	Charleston & Western Carolina	35	Hopper	Pullman-Standard
Aug. 24	Chicago & North Western	60	Cov. Hopper	General American
Aug. 31	Erie	325	Gondola	Company Shops
Aug. 31	Chicago, Rock Island & Pacific	800	Box	Pressed Steel Car

PASSENGER-TRAIN CARS

Aug. 10	Chicago & North Western-Union Pacific-Southern Pacific	17		Pullman-Standard
Aug. 10	Chicago & North Western-Union Pacific	17		Pullman-Standard
Aug. 10	Atlantic Coast Line	17		Edward G. Budd Mfg. Co.
Aug. 17	Southern Pacific	51		Pullman-Standard

able facilities in the way of wire chases and entrances to the tower, as well as ducts leading from the relay room to the interlocking machine and track model. All wire used inside the tower will be provided with non-inflammable insulation. New steel terminal cases will be installed just outside the tower and at points as required to terminate all cables which previously ran directly into the old building —the tower ends of all of these cables having been destroyed at the time of the fire. New non-inflammable insulated wire will be run from these outside cable terminal cases to the main terminal board in the tower. The field installation work is being taken care of by the regular construction forces of the Terminal Company.

Supply Trade

The Bettendorf Company, Bettendorf, Iowa, is rearranging and modernizing its plant facilities to increase and accelerate production. Core rooms, molding and shake-out rooms are being moved and re-equipped for assembly line operation. New furnaces are being built, conveyor systems installed and chemical and metallurgical laboratories erected. The cost of the new equipment and the rearranging of facilities is $500,000.

OBITUARY

Abram Ladue Whipple, district sales manager, The Standard Stoker Company, Inc., with headquarters at New York, died on August 10, at the age of 67.

George N. Van Sweringen, vice-president of the Chicago Railway Equipment Company, died in Evanston, Ill., on September 3.

Charles A. Campbell, engineer of tests, New York Air Brake Company, with headquarters at Watertown, N. Y., died of a heart ailment at Watertown on September 4. Mr. Campbell was born in Harrisville, N. Y., in 1893, and received his early education in Montreal, Que. During school vacation periods as a medical student, he served as apprentice draftsman with Allis Chalmers and Bullock, Ltd., where he became interested in mechanical engineering and adopted it as his profession. In 1910 he became a draftsman with the New York Air Brake Company, and a few years later was selected as an apprentice for the Experimental department, where he found background for the position of engineer of tests which he assumed in 1925 and held until his death. Mr. Campbell was honored as one of the nation's "modern pioneers" by the National Association of Manufacturers last February (reported in the *Railway Age* of February 24, 1940, page 380). At this time it was brought out that he was the recipient of a total of 123 patents granted to him solely or jointly and had entered application for 16 additional grants. Among his outstanding contributions to the science of railroading are the development of a graduating type of retardation controller, known commercially as the Declekron, and the electro-pneumatic straight-air controlled brake system. Other of his patents have influenced the development of the modern air brake for freight service, known as the AB brake, which has been adopted by the railroads for application to all cars in interchange service by 1945.

Charles A. Campbell

* * *

This Bascule Lift Span in the Bridge of the Norfolk & Western Across the Elizabeth River at Norfolk, Va., Was Recently Strengthened By Welding Wrought-Iron Plates to the Top Flanges of the Stringers

Construction

CANADIAN NATIONAL.—A contract has been awarded to the Fundy Construction Company, Ltd., Halifax, N. S., for the construction of a new locomotive roundhouse at Fairview, N. S., at an estimated cost of $100,000.

CHICAGO, ROCK ISLAND & PACIFIC.—New terminal facilities for handling Rocket trains to be placed in service this fall between Memphis, Tenn., and Amarillo, Tex., are being constructed at Memphis at a cost of approximately $32,000. The new facilities will consist of a transfer table, a drop pit, two inspection pits, an 8,000-gal. fuel oil tank and water, steam and air extensions.

CHICAGO, ROCK ISLAND & PACIFIC.—A contract amounting to approximately $32,000 has been awarded F. K. Ketler, Chicago, for the erection of steel and the construction of new abutments for new approach deck plate girder spans at three bridges on the Short Line south of Des Moines, Ia. In this work, a 60-ft. deck plate girder span with timber-ballast decks will replace pile trestle approaches at each end of a 100-ft. deck plate girder span on a bridge near Allerton, Iowa; one 70-ft. deck plate girder span will replace a pile trestle approach at the south end of a 65-ft. deck plate girder span near Chariton, Iowa, and 60-ft. and 70-ft. deck plate girder spans will replace pile trestle approaches at each end of an existing 65-ft. deck plate girder span near Hartford, Iowa. The new abutments will be of reinforced concrete supported on steel bearing piles.

ILLINOIS CENTRAL AND SOUTHERN.—The State of Illinois, Division of Highways, has awarded two contracts for an overhead highway bridge for Route 14 over the tracks of the Illinois Central and the Southern at Centerville, Ill. The bridge will consist of three I-beam spans, two 70 ft. long and one 87 ft. 6 in. long, supported on a reinforced concrete substructure. It will provide two 24-ft. traffic roadways. The contract for the construction of the bridge, including the erection and painting of the steel, amounting to $102,490, was awarded the H. H. Hall Construction Company, East St. Louis, Ill., and the contract for the fabrication and delivery of the structural steel, amounting to $20,304, was awarded the Missouri Bridge & Iron Company, St. Louis, Mo.

U. S. ARMY.—The constructing quartermaster of the Savanna Ordnance Depot, Proving Ground, Ill., has awarded a contract amounting to $337,323 to the Acme Railroad Construction Company, Cleveland, Ohio, for the construction and completion of a standard gage railroad track at the Savanna Ordnance Depot. The work will consist of the construction of approximately 85,000 lin. ft. of single track and 92 No. 8 turnouts. The track will be laid with new rail of 80 lb. A. S. C. E. section, with 6-in. by 8-in. by 8-ft. ties, and will be ballasted with 4 in. of crushed rock ballast beneath the ties.

Financial

ATCHISON, TOPEKA & SANTA FE-COLORADO & SOUTHERN.—*Joint Operation.*—These roads have applied to the Interstate Commerce Commission for authority to continue a 40-year-old agreement under which they have made joint use of each other's lines between Denver, Colo., and Pueblo. The contract expired March 1 and has been extended until September 1 by mutual agreement.

BALTIMORE & OHIO-WESTERN MARYLAND.—*Abandonment and Operation.*—The Interstate Commerce Commission, Division 4, has approved a plan whereby these roads will abandon sections of their parallel lines between Elkins, W. Va., and Belington, and enter a permanent operating agreement for the joint use of the remaining tracks. The plan, which becomes approved as a result of Division 4's decisions on separate applications filed by the two roads, involves the abandonment by the B. & O. of its 8.4-mile line from Leiter Junction to Belington, and operation over 10 miles of W. M. line between Belington and Norton. The W. M. will abandon a 5.8-mile line extending from a point near Elkins Junction to Norton, and operate over seven miles of B. & O. tracks between Elkins and Norton.

BOSTON & MAINE.—*Operation of Vermont Valley.*—These two roads have applied to the Interstate Commerce Commission for authority to extend until July 1, 1960, the agreement under which the B. & M. has operated the V. V. since 1893. The occasion for asking extension at this time of the agreement which is now set up to expire July 1, 1950, is the V. V.'s desire to meet an October 1 maturity on $1,500,000 of its bonds with a new issue due October 1, 1955.

CAPE FEAR.—*Operation, Construction and Abandonment.*—This road which functions primarily to serve the rail transportation needs of the federal government's military establishment at Fort Bragg, N. C., has been authorized by the Interstate Commerce Commission, Division 4, to operate over three miles of additional track to be constructed by the government within the reservation. The construction will involve a new connection with the Atlantic Coast Line, and thus the decision's abandonment phase—which permits the Cape Fear to abandon operation over the present A. C. L. connection extending from Fort Bragg to Fort Junction, 1.75 miles. Also authorized is construction by the applicant itself of about a half-mile of track to serve a private industry.

CHICAGO, BURLINGTON & QUINCY.—*Lease by Colorado & Southern of Fort Worth & Denver City and Wichita Valley.*—The Interstate Commerce Commission, Division 4, has postponed "until further order of this commission" the effective date of its July 31 order authorizing the Colorado & Southern to lease and operate directly two of its subsidiaries—the Fort Worth & Denver City and the Wichita Valley. Considerable opposition to the transaction had been voiced by Texas interests; and the present order of Division 4 comes "upon consideration of the record . . . and the petition of the Childress Chamber of Commerce, the Childress Board of City Development, Childress County, Texas, the State of Texas, the Railroad Commission of Texas, the Fort Worth Freight Bureau, and the Fort Worth Chamber of Commerce for reopening, rehearing, reconsideration and postponement" of the effective date of the aforementioned July 31 order.

CHICAGO, MILWAUKEE, ST. PAUL & PACIFIC.—*Abandonment and Trackage Rights.*—The Interstate Commerce Commission, Division 4, has authorized this road to carry out plans whereby it proposes to dispense with most of its facilities between Everett, Wash., and Monroe, and use Northern Pacific and Great Northern facilities between those points. Specifically the Milwaukee is authorized to abandon its line between Lowell, Wash., and a point in the vicinity of Monroe, about 13.4 miles, together with about 1.7 miles of branch line in Everett; to operate under trackage rights over the N. P. between Lowell and Delta Yard in Everett, about 2.7 miles, and over the G. N. between Lowell and the aforementioned point in the vicinity of Monroe, about 13.07 miles. Also, to construct at various locations along the route seven tracks aggregating about 5,978 ft. in length.

COLORADO & SOUTHEASTERN.—*Abandonment.*—The Interstate Commerce Commission, Division 4, has authorized this road to abandon a 2.7-mile line extending from Barnes, Colo., to a point west of Ludlow.

COPPER RANGE.—*Abandonment.*—This road has been authorized by the Interstate Commerce Commission, Division 4, to abandon its 2.3-mile branch line extending from Greenland Junction, Mich., to Greenland.

GULF, MOBILE & NORTHERN.—*Merger.*—The district court has approved the sale of the Mobile & Ohio to its bondholders reorganization committee and the merger of the M. & O. with the G. M. & N. The merger is expected to be completed during the first part of September.

GULF, MOBILE & OHIO.—*Trackage Rights.*—This road has been authorized by the Interstate Commerce Commission, Division 4, to continue arrangements whereby one of its predecessor companies (the Mobile & Ohio) has for many years operated under trackage rights over lines of the Southern between Memphis, Tenn., and Corinth, Miss., 87.34 miles, and between Haleyville, Ala., and Birmingham, 91.7 miles. The decision notes that with passage also to the G. M. & O. of M. & O. trackage rights over the Illinois Central between Corinth and Haleyville, the applicant will be enabled to operate through service between Memphis and Birmingham.

INTERNATIONAL-GREAT NORTHERN.—*Abandonment.*—This road has been authorized by the Interstate Commerce Commission, Division 4, to abandon a 4.1-mile branch line extending from Tucker, Tex., to Salt City.

MISSOURI PACIFIC.—*Trackage Rights.*—This road has been authorized by the Interstate Commerce Commission, Division 4, to execute, with the Chicago, Wilmington & Franklin Coal Company and the Chicago & Eastern Illinois, trackage-rights agreements which will give the M. P. direct access to the Peabody Coal Company's Peabody Mine No. 18, located near West Frankfort in Franklin County, Ill. As set forth in the decision the trackage rights acquired by the M. P. will be "over a line of the Chicago, Wilmington & Franklin Coal Company . . . from a connection at or near Orient Mine No. 1, west of West Frankfort, to a connection with a line of the Chicago & Eastern Illinois, a distance of about 103 feet, and thence over the line of the Chicago & Eastern Illinois to Peabody Mine No. 18, east of West Frankfort . . . a total distance of approximately five miles, all in Franklin County, Ill."

PENNSYLVANIA.—*Operation.*—This road has applied to the Interstate Commerce Commission for authority to operate over 1.77 miles of track from a point near 120th street, Chicago, to a point in Hammond, Ind., the track being situated in the so-called State Line Industrial District of Chicago and Hammond.

PERE MARQUETTE-HURON & WESTERN.—*Abandonment.*—These roads have applied to the Interstate Commerce Commission for authority, respectively, to abandon operation and abandon a branch of the Huron & Western which extends from a connection with the Detroit & Mackinac at a point north of Bay City, Mich., for 9.73 miles "in a westerly and southerly direction"—all in Bay County, Mich.

ST. LOUIS SOUTHWESTERN.—*Abandonment of Stephenville North & South Texas.*—The Interstate Commerce Commission, Division 4, has authorized this road and the Stephenville North & South Texas, respectively, to abandon operation and abandon the latter's entire line extending from Gatesville, Tex., to Hamilton, 32.7 miles.

WICHITA FALLS & SOUTHERN.—*Trackage Rights.*—This road has applied to the Interstate Commerce Commission for authority to continue operations under a contract for joint use of the Wichita Valley's line from Wichita Falls, Tex., to Maples, 3.2 miles. The present contract expires December 31, and it is proposed to renew for 10 years.

Average Prices of Stocks and Bonds

	Sept. 3	Last week	Last year
Average price of 20 representative railway stocks..	29.60	28.53	29.87
Average price of 20 representative railway bonds..	58.59	57.34	56.30

Dividends Declared

Dayton & Michigan.—87½¢, semi-annually; 8 Per Cent Preferred, $1.00, quarterly, both payable October 1 to holders of record September 16.

Lackawanna R. R. Co. of N. J.—$1.00, quarterly, payable October 1 to holders of record September 6.

Pittsburgh, Ft. Wayne & Chicago.—$1.75, payable October 1 to holders of record September 10; Preferred, $1.75, quarterly, payable October 8 to holders of record September 10.

Railway Officers

EXECUTIVES

Chester T. Dike, vice-president (engineering) of the Chicago & North Western, and vice-president and chief engineer of the Chicago, St. Paul, Minneapolis & Omaha (a subsidiary of the Chicago & North Western), with headquarters at Chicago, retired on August 31. A biographical sketch of the career of Mr. Dike, accompanied by a photograph, was published in the *Railway Age* of April 6, page 651, following the relinquishment of his duties as chief engineer of the North Western on April 1.

J. M. Guild, special representative to the assistant vice-president of operations of the Union Pacific at Omaha, Neb., has been promoted to assistant to the vice-president of operations, with supervision over safety matters and with the same headquarters. Mr. Guild succeeds **W. C. Shelver,** who retired on September 1.

Mr. Shelver entered the service of the Union Pacific in 1912 as a dispatcher in Omaha and served as trainmaster, assistant superintendent, safety agent and transportation inspector on the Wyoming, Nebraska and Colorado divisions. He was later made chief dispatcher at Green River, Wyo., and on November 1, 1938, he was promoted to assistant to the vice-president at Omaha.

OPERATING

O. R. Crooks has been appointed acting superintendent of the Toledo terminal with headquarters at Toledo, Ohio, succeeding **M. J. Nally,** who has resigned.

F. W. Hopkins, chief clerk to the division superintendent on the Southern Pacific lines in Texas and Louisiana at Lafayette, La., has been promoted to assistant superintendent, with headquarters at New Orleans, La., a newly created position.

Pablo M. Hernandez has been appointed superintendent of the Southeastern division of the National Railways of Mexico, with headquarters at Tierra Blanca, Ver. C., succeeding **Guillermo Castillo Baez,** who has been appointed relief superintendent, with headquarters at Mexico City, D. F.

W. H. Dick, assistant to the chief operating officer and acting general superintendent on the Chicago, Rock Island & Pacific, with headquarters at Kansas City, Mo., has retired, effective September 1, after 39 years service. **O. W. Limestall,** general superintendent, with headquarters at Des Moines, Iowa, has been transferred to Kansas City, succeeding **William H. Kelly,** whose death on April 11, was announced in the *Railway Age* of April 20. **G. W. Raney,** general superintendent, with headquarters at El Reno, Okla., has been transferred to Des Moines, replacing Mr. Limestall, and **C. L. Bakke,** division superintendent at Kansas City, has been promoted to general superintendent at El Reno, relieving Mr. Raney. **G. R. Branch,** division superintendent at Dalhart, Tex., has been transferred to Kansas City, succeeding Mr. Bakke and **E. B. Herdman,** assistant superintendent at Cedar Rapids, Iowa, has been promoted to superintendent at Dalhart, replacing Mr. Branch. **David Berman,** assistant superintendent at Kansas City, has been transferred to Minneapolis, Minn. **R. E. Johnson,** trainmaster at El Reno, has been promoted to assistant superintendent at Trenton, Mo., and **J. W. Detrick,** trainmaster at Herington, Kan., has been transferred to El Reno, Okla.

D. E. Rossiter, train rules examiner of the Western lines of the Chicago, Milwaukee, St. Paul & Pacific, with headquarters at Seattle, Wash., has been promoted to chief train rules examiner for the system, with headquarters at Chicago, succeeding to the duties of **E. A. Meyer,** assistant to the general managers, whose death on July 15 was announced in the *Railway Age* of July 20. Mr. Rossiter entered railway service on the Milwaukee in 1895 as an operator and agent, later being promoted successively to train dispatcher, chief train dispatcher and trainmaster. In 1918, he was advanced to superintendent at Portage, Wis., later serving in this capacity at Minneapolis, Minn., and Tacoma, Wash., as general superintendent at Butte, Mont., and superintendent at Spokane, Wash. On January 16, 1931, he was appointed train rules examiner of the Western lines, with headquarters at Spokane, later being transferred to Seattle.

Claude S. Cravens, special representative of the general manager of the Atchison, Topeka & Santa Fe at Topeka, Kan., has been promoted to assistant general manager of the Eastern lines, with the same headquarters, succeeding **Albert Ewing,** who retired on September 1.

Mr. Cravens was born at Mansfield, Tex., and entered railway service as a caller-messenger on the Santa Fe in 1899. He later served successively as an operator, agent, transportation inspector and trainmaster at Clovis, N. M. In 1926, he was promoted to assistant superintendent at Amarillo, Tex., and in 1929, he was advanced to acting division superintendent at that point, later serving as division superintendent at La Junta, Colo., Clovis and Slaton, Tex., and Newton, Kan. In May, 1940, Mr. Cravens was appointed special representative of the general manager at Topeka, the position he held until his recent promotion.

Mr. Ewing was born at Princeton, Ill., on July 7, 1875, and entered railway service in 1892, as a telegraph operator and agent on the Chicago, Burlington & Quincy. In 1897, he went with the Santa Fe as an operator and clerk at La Junta, later becoming an operator and agent, and transportation clerk in the general superintendent's office at La Junta. In 1909, he was promoted to trainmaster on the Rio Grande division, later being transferred to the Missouri and Illinois divisions. In 1917, he was advanced to superintendent and served in that capacity at La Junta, Clovis and Slaton. Mr. Ewing was promoted to assistant general manager at Topeka in 1927.

TRAFFIC

H. W. Hanes, general agent, freight department, for the Canadian National-Grand Trunk Western at Edmonton, Alta., has been appointed general agent at St. Paul, Minn., succeeding **C. W. Nelson,** who has been transferred to Omaha, Neb. Mr. Nelson replaces **A. R. Menning,** who has been transferred to Kansas City, Mo., relieving **G. W. Amey.** Mr. Amey has been transferred to Los Angeles, Cal., succeeding **C. S. Wainwright,** who retired on August 24, after 40 years of service.

R. H. Webb, traveling freight agent for the Chesapeake & Ohio and the Pere Marquette, has been promoted to general agent at Seattle, Wash., succeeding **E. D. Lamiman,** resigned.

E. L. Dash, division freight agent of the Reading at Philadelphia, Pa., will take over the duties of **G. A. Buck,** division freight agent at Philadelphia, who has been retired after 48 years of faithful service. **W. M. Potts,** general agent of the Reading and Central of New Jersey at Cincinnati, Ohio, has been appointed division freight agent of the Reading, to succeed Mr. Dash. **James Lawson** has been appointed general agent at Cincinnati, to succeed Mr. Potts.

James H. McWaters, whose promotion to traffic manager on the Chicago Great Western, with headquarters at Chicago, was announced in the *Railway Age* of August 24, was born at Zumbrota, Minn., and entered railway service on March 1, 1915, as chief clerk to the assistant superintendent on the Great Western at Red Wing, Minn. In July, 1916, he was appointed clerk in the office of the division engineer at St. Paul, Minn., later being appointed secretary to the division superintendent at that point. In April, 1917, he went with the traffic department of the Chicago, St. Paul, Minneapolis & Omaha (Chicago & North Western subsidiary), and four months later he returned to the Great Western as chief clerk to the division freight agent at Red Wing. Mr. McWaters was promoted to traffic inspector at Ft. Dodge, Iowa, in June,

James H. McWaters

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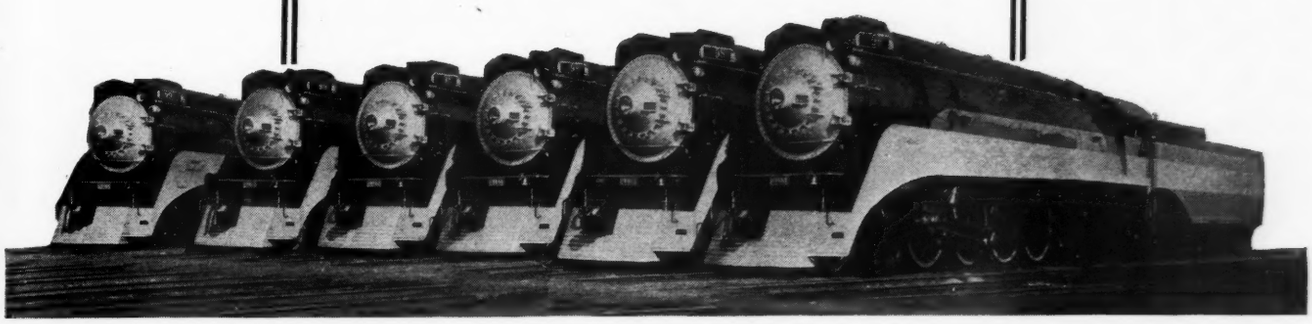
PREPARE

WITH

POWER



INCREASED CARLOADINGS
forecast the need for new power.

MODERN LOCOMOTIVES
are not designed and built overnight.

NOW
is the time to order new equipment.

LIMA LOCOMOTIVE WORKS LIMA LOCOMOTIVE WORKS INCORPORATED **INCORPORATED, LIMA, OHIO**

1919, to general agent at Mason City, Iowa, on June 16, 1920, and to division freight and passenger agent at Mason City on January 1, 1935, holding the latter position until his recent promotion.

ENGINEERING AND SIGNALING

C. A. Maxeiner, supervisor of track of the New York Central, lines Buffalo and East, has been appointed division engineer of the St. Lawrence, Adirondack and Ottawa divisions, with headquarters at Watertown, N. Y.

Ralph R. Strother, assistant chief engineer and superintendent of way and structures of the Chicago, St. Paul, Minneapolis & Omaha (subsidiary of the Chicago & North Western), with headquarters at St. Paul, Minn., has been promoted to chief engineer, with the same headquarters, succeeding to the duties of **Chester T. Dike,** vice-president and chief engineer, whose retirement on August 31 is announced elsewhere in these columns.

Mr. Strother was born at Hubbard, Iowa, on August 17, 1885, and graduated in civil engineering from Iowa State College in 1907. He entered railway service as a chainman in the engineering department of the North Western in September,

Ralph R. Strother

1909, and later was promoted to rodman and instrumentman on location. On June 15, 1914, he was promoted to assistant engineer on field work for the Omaha. In 1920, he was advanced to assistant engineer in charge of estimates, with headquarters at St. Paul, and on February 1, 1929, he was promoted to assistant chief engineer. On November 1, 1938, Mr. Strother was also placed in charge of maintenance of way and structures.

PURCHASES AND STORES

E. S. Bonnet, fuel purchasing agent of the New York Central and the Cleveland, Cincinnati, Chicago & St. Louis, with headquarters at New York, has been appointed first assistant purchasing agent of the New York Central, the Indiana Harbor Belt and the Chicago River & Indiana, at New York, with supervision over the purchase of fuel coal and forest products. **E. O. Hornig,** assistant to vice-president in charge of purchases and stores, of the New York Central System, at New York, has been appointed assistant purchasing agent of the New York Central, the Indiana Harbor Belt and the Chicago River & Indiana, with supervision over the purchase of miscellaneous materials to be assigned.

SPECIAL

Harry W. Frier, assistant advertising manager of the DeSoto division of the Chrysler Corporation, Detroit, Mich., has

Harry W. Frier

been appointed manager of the advertising department of the Chicago & North Western, with headquarters at Chicago, succeeding **Charles R. Custer,** who retired on September 1. Mr. Frier is a graduate of the University of Illinois and served the North Western as assistant advertising manager from 1930 until 1936, at which time he joined the Chrysler organization. Prior to that time he had been associated with the General Outdoor Ad-

Charles R. Custer

vertising Company, the Olson Rug Company, and McCutcheon-Gerson Service.

Mr. Custer was born at Homer, Ill., on June 30, 1872, and entered railway service as an office boy on the North Western on November 1, 1889. He later held various clerical positions in the passenger traffic department and was then advanced successively to general advertising agent and assistant general passenger agent at Chicago. In January, 1930, he was promoted to manager of the advertising department, the position he held until his retirement.

OBITUARY

Claude W. Meldrum, assistant general passenger agent of the Great Northern, with headquarters at Seattle, Wash., died of coronary thrombosis on August 29, at the Swedish hospital in Seattle.

George F. Blackie, who retired on January 1, 1940, as chief engineer of the Nashville, Chattanooga & St. Louis, with headquarters at Nashville, Tenn., died at that point on August 22. A photograph and biographical account of Mr. Blackie's career were published in the *Railway Age* of February 3, page 271, following his retirement.

Carl S. Heritage, bridge engineer of the Kansas City Southern, with headquarters at Kansas City, Mo., and president of the American Railway Bridge and Building Association from 1930 to 1934, died on August 31. Mr. Heritage was born at Pennsville, N. J., on September 3, 1880, and graduated in civil engineering from Lehigh University in 1904. He entered railway service in 1903, during his summer vacation, as an assistant on the engineering corps of the Baltimore & Ohio at Chicago, and in 1904, after graduation went with the erection department of the Pennsylvania Steel Company, Steelton, Pa., later serving as a draftsman for McClintic-Marshall Company, Pittsburgh, Pa., and Waddell & Harrington, consulting engineers, at Kansas City. In 1910, he returned to railway service as a bridge draftsman for the Kansas City Southern at Kansas City and in 1915 he was promoted to bridge engineer, the position he held until his death.

Sidney F. Baker, general freight agent on the St. Louis Southwestern, with headquarters at Tyler, Tex., died on August 6, following an extended illness.

Mr. Baker was born at Columbus, Miss., on April 5, 1877, and entered railway service in September, 1896, as a messenger in the general freight department of the Texas & Pacific at Dallas, Tex. He later served in various clerical capacities in that department and in August, 1899, he went with the El Paso & Northeastern (now part of the Southern Pacific) as chief rate clerk at Alamogordo, N. M., returning to the Texas & Pacific as record clerk at Dallas two months later. In 1901, he went with the Missouri-Kansas-Texas as rate clerk at Dallas and two years later was promoted to traveling freight agent. In 1905, he was appointed commercial agent at Waco, Tex., and in 1909, after serving as chief rate clerk and commercial agent at various points, he went with the Texarkana & Ft. Smith (now part of the Kansas City Southern) as chief rate clerk in the general freight department at Texarkana, Ark. The following year he went with the St. Louis Southwestern as chief clerk in the general freight department at Tyler, Tex. Mr. Baker was promoted to general agent, freight department, in 1920, assistant general freight agent in 1923, and general freight agent in 1927. In 1929, he was advanced to assistant traffic manager, and in 1932, he was appointed assistant general freight agent. On January 1, 1938, Mr. Baker was again promoted to general freight agent, with headquarters at Tyler, the position he held at the time of his death.

Table of Revenues and Expenses begins on next left-hand page

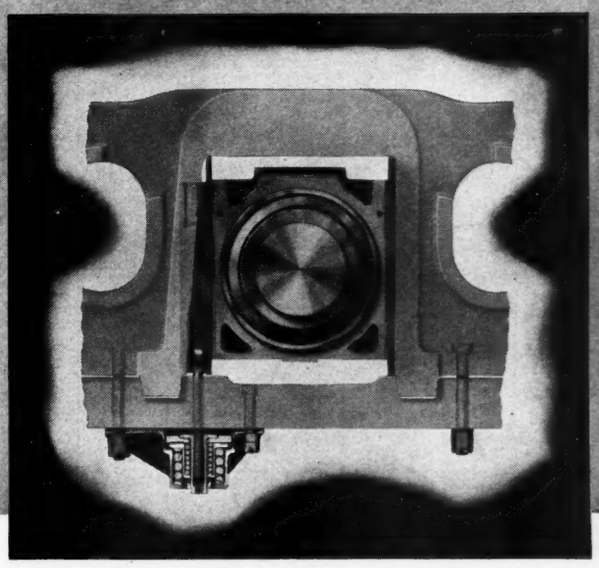
AIR GAP

means higher maintenance

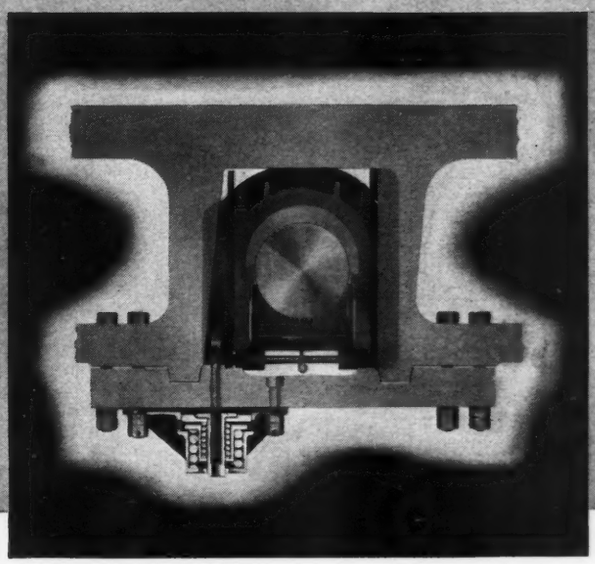
ELIMINATE IT WITH

FRANKLIN

AUTOMATIC COMPENSATORS AND SNUBBERS



Franklin Automatic Compensator and Snubber for Roller Bearing Driving Box application.



Franklin Automatic Compensator and Snubber for Friction Bearing Driving Box application.

With the hand-adjusted driving box wedge allowance must be made for temperature changes. This means that, until such time as the box expands to running speed temperature, the driving box pounds, and pounding driving boxes cost money. » » » There is no air gap on a locomotive equipped with Franklin Automatic Compensators and Snubbers. A constant, accurate fit is maintained and expansion and contraction due to changes in driving box temperature are taken care of *automatically*. These close tolerances are essential on roller bearing driving box applications. » » » Reduce maintenance . . . protect your driving boxes with Franklin Automatic Compensators and Snubbers, and eliminate slack between engine and tender with its twin, the E-2 Radial Buffer.

The close tolerances essential to efficient Booster operation call for genuine repair parts made by Franklin.

FRANKLIN RAILWAY SUPPLY COMPANY, INC.

NEW YORK CHICAGO MONTREAL

REVENUES AND EXPENSES OF RAILWAYS

MONTH OF JULY AND SEVEN MONTHS OF CALENDAR YEAR 1940

Name of road		Av. mileage operated during period	Operating revenues: Freight	Passenger	Total (inc. misc.)	Operating expenses: Maintenance of Way and structures	Maintenance of Equipment	Traffic	Transportation	Total	Operating ratio	Net from railway operation	Operating income	Net railway operating income 1940	Net railway operating income 1939
Akron, Canton & Youngstown	July	171	$184,899	$46	$195,740	$31,690	$22,182	$14,270	$58,629	$136,820	69.9	$58,920	$44,760	$35,094	$17,686
	7 mos.	171	1,241,099	226	1,297,764	183,347	148,767	97,582	397,285	892,603	68.8	405,161	302,133	224,263	97,183
Alton	July	959	1,114,706	216,723	1,511,593	233,370	205,874	46,438	561,969	1,120,145	74.1	391,448	308,857	125,450	157,444
	7 mos.	959	6,376,981	1,472,754	9,163,936	1,348,688	1,557,440	322,379	3,836,092	7,564,169	82.5	1,599,767	978,161	—181,382	93,900
Atchison, Topeka & Santa Fe System	July	13,414	14,683,348	1,838,586	17,685,802	2,234,975	2,902,122	484,618	5,037,851	10,952,517	61.9	6,733,285	4,904,016	4,959,409	5,437,967
	7 mos.	13,416	74,667,623	10,206,219	92,869,387	14,471,003	20,808,735	3,300,074	33,296,883	74,379,571	80.1	18,489,816	9,262,664	9,433,221	8,103,157
Atlanta & West Point	July	93	107,410	24,995	151,394	19,090	25,621	8,508	67,264	131,043	86.6	20,351	8,425	—3,388	—2,368
	7 mos.	93	746,615	166,506	1,066,105	152,885	190,093	59,957	456,332	933,284	87.5	132,821	50,434	—33,071	—51,230
Western of Alabama	July	133	107,421	24,745	145,776	14,545	26,696	7,825	55,125	113,225	77.7	32,551	20,249	24,903	6,393
	7 mos.	133	731,129	163,925	1,009,241	138,434	210,941	57,009	398,245	869,924	86.2	139,317	51,590	68,412	38,309
Atlanta, Birmingham & Coast	July	639	276,860	6,345	299,136	45,173	51,904	22,835	119,635	258,056	86.3	41,080	15,432	—7,837	—9,767
	7 mos.	639	1,692,968	184,968	2,027,408	338,899	355,857	167,179	856,552	1,844,979	91.0	182,429	1,707	—157,487	—44,473
Atlantic Coast Line	July	5,100	2,488,539	374,504	3,140,984	426,299	850,004	139,020	1,429,704	3,014,359	96.0	126,625	—48,375	—187,189	—161,958
	7 mos.	5,101	20,957,817	5,508,770	29,417,316	3,121,432	6,063,478	1,119,551	11,938,468	23,683,690	80.5	5,733,626	2,608,626	955,862	2,549,924
Charleston & Western Carolina	July	343	212,333	1,761	218,282	30,220	30,660	9,245	67,119	143,531	65.8	74,751	52,751	52,440	59,275
	7 mos.	343	1,511,275	9,552	1,551,291	199,065	298,580	64,280	499,576	1,102,618	71.1	448,673	287,673	254,349	289,823
Baltimore & Ohio	July	6,380	13,535,402	940,657	15,263,428	1,763,809	3,585,323	422,163	5,140,533	11,634,291	76.2	3,629,137	2,677,530	2,209,132	2,267,838
	7 mos.	6,381	86,995,422	5,682,723	98,423,257	9,360,291	22,291,417	2,886,062	35,430,123	74,617,062	75.8	23,806,195	17,136,312	14,585,294	9,976,059
Staten Island Rapid Transit	July	24	52,722	75,396	139,043	8,878	23,628	1,039	76,436	121,693	87.5	17,350	—7,269	—12,579	—13,210
	7 mos.	24	395,861	471,710	923,905	70,918	167,223	7,779	538,627	864,628	93.6	59,277	—120,715	—160,548	—181,909
Bangor & Aroostook	July	603	241,380	13,135	265,814	98,653	83,695	6,376	95,805	304,649	114.6	—38,835	—52,437	—26,299	—60,758
	7 mos.	603	3,127,098	102,950	3,345,417	637,731	574,243	35,617	871,484	2,282,967	68.2	1,062,450	724,609	743,899	788,798
Bessemer & Lake Erie	July	224	2,089,029	585	2,100,632	120,360	328,749	12,031	254,371	749,141	35.7	1,351,491	997,447	1,053,819	747,070
	7 mos.	224	8,712,536	4,333	8,776,624	782,024	2,162,877	87,559	1,432,080	4,695,361	53.5	4,081,263	2,880,064	3,206,189	1,269,585
Boston & Maine	July	1,910	2,856,956	629,537	3,962,828	571,630	566,281	69,396	1,522,258	2,891,432	72.96	1,071,396	747,204	517,817	533,827
	7 mos.	1,910	19,548,644	3,948,813	26,925,229	3,516,608	4,040,158	449,222	10,761,369	19,853,302	73.73	7,071,927	4,963,455	3,397,071	3,006,700
Burlington, Rock Island	July	255	58,631	21,473	87,849	18,248	18,428	4,270	50,261	104,554	119.0	—16,705	—26,723	—29,530	32,596
	7 mos.	255	514,732	131,130	701,132	115,816	125,668	31,155	351,075	694,139	99.0	6,993	—64,701	—104,704	—71,183
Cambria & Indiana	July	37	116,318	.....	116,404	12,747	56,987	456	10,785	86,542	74.34	29,862	1,564	63,545	93,082
	7 mos.	37	858,180	.....	858,830	58,747	361,982	3,109	88,105	551,446	64.21	307,384	83,182	542,859	495,848
Canadian Pacific Lines in Maine	July	234	109,645	19,801	152,045	34,239	38,389	6,178	54,308	138,949	91.4	13,096	2,839	—20,923	—48,567
	7 mos.	234	1,733,171	95,422	1,929,302	248,417	323,696	47,893	614,224	1,273,879	66.0	655,423	577,433	426,183	90,955
Canadian Pacific Lines in Vermont	July	91	87,813	7,135	105,167	14,360	24,419	2,151	62,228	105,814	100.6	—647	—7,929	—31,323	—45,825
	7 mos.	91	575,249	53,869	703,783	108,486	176,283	17,249	462,212	784,379	111.5	—80,596	—132,611	—276,892	—354,503
Central of Georgia	July	1,863	1,153,542	109,500	1,375,655	187,479	291,651	52,959	588,018	1,198,566	87.1	177,089	57,403	29,793	29,598
	7 mos.	1,865	7,531,607	754,929	9,319,906	1,299,817	1,919,061	379,985	4,131,735	8,275,579	88.8	1,044,327	187,329	25,675	152,536
Central of New Jersey	July	710	2,351,643	427,403	2,989,193	311,587	646,003	54,566	1,183,931	2,309,274	77.3	679,919	250,614	92,277	69,813
	7 mos.	710	16,557,088	2,411,675	20,277,362	1,800,272	4,432,171	339,325	8,293,114	15,571,974	76.8	4,705,388	1,797,801	598,301	231,314
Central Vermont	July	422	472,722	27,263	538,105	96,320	71,796	12,138	233,171	431,487	80.2	106,618	81,149	44,095	18,613
	7 mos.	422	3,271,819	192,166	3,731,555	512,482	584,537	82,677	1,584,963	2,896,888	77.6	834,667	664,771	391,006	20,559
Chesapeake & Ohio	July	3,115	10,949,594	261,507	11,685,795	1,037,214	2,083,944	222,588	2,615,395	6,260,184	53.6	5,425,611	3,625,469	3,581,903	3,808,125
	7 mos.	3,115	72,487,961	1,829,562	77,098,661	7,157,473	14,540,820	1,474,411	18,069,991	43,404,046	56.3	33,694,615	23,366,357	23,558,987	14,218,432
Chicago & Eastern Illinois	July	925	1,005,411	123,444	1,262,288	174,505	233,647	57,906	492,070	1,023,048	81.0	239,240	149,240	25,732	55,994
	7 mos.	925	6,810,633	885,816	8,745,860	1,096,595	1,638,515	397,165	3,610,836	7,188,674	82.2	1,557,186	949,186	59,828	36,725
Chicago & Illinois Midland	July	131	357,448	541	386,973	67,894	64,616	19,592	90,229	261,911	67.7	125,062	100,115	94,638	66,210
	7 mos.	131	2,375,167	4,333	2,525,444	332,234	460,131	142,337	630,307	1,702,102	67.4	823,342	649,640	633,206	419,346
Chicago & North Western	July	8,322	6,285,192	1,219,912	8,313,981	1,217,607	1,547,833	207,963	2,955,412	6,258,917	75.3	2,055,064	1,476,180	1,253,487	530,965
	7 mos.	8,325	37,579,963	6,532,927	49,529,408	7,328,837	10,306,991	1,339,165	20,418,261	41,638,481	84.1	7,890,927	3,760,334	2,145,510	—1,104,065
Chicago, Burlington & Quincy	July	8,958	6,969,192	936,395	8,709,588	1,395,690	1,380,326	241,305	2,874,610	6,184,413	71.0	2,525,175	1,750,691	1,429,856	1,373,806
	7 mos.	8,984	42,037,898	4,825,865	52,613,262	7,852,844	9,781,352	1,763,107	20,053,505	41,519,993	78.9	11,093,269	5,752,176	3,632,742	3,677,388
Chicago Great Western	July	1,502	1,333,413	45,605	1,492,158	233,367	234,155	57,239	548,197	1,123,409	75.3	368,749	272,472	82,033	128,144
	7 mos.	1,502	9,010,052	265,069	10,002,707	1,391,824	1,677,427	412,523	3,888,467	7,729,061	77.3	2,273,646	1,607,700	340,179	452,299
Chicago, Indianapolis & Louisville	July	549	645,365	35,868	748,103	86,617	126,196	26,726	267,497	539,706	72.1	208,397	166,320	75,376	—11,240
	7 mos.	549	4,606,321	276,216	5,376,432	499,025	887,954	196,346	1,997,117	3,821,983	71.1	1,554,449	1,257,976	600,491	—331,355

Continued on next left-hand page

"Tailor Made"

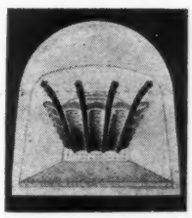
YET STANDARDIZED!

Each Security Arch is "tailor made" to suit the individual class of power in which it must function. But so effectively is Security Arch Brick standardized that only six different Security Brick patterns are needed for more than 50% of the Security Arch Brick used.

This high standardization reflects the engineering and experience of the American Arch Company.

It simplifies the application of the brick arch and saves the stores department a vast amount of trouble.

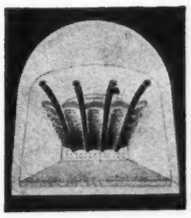
This foresight of the American Arch Company in adhering to standards is but one of the many ways in which the American Arch Company is serving the railroads.



There's More to
SECURITY ARCHES
Than Just Brick

HARBISON-WALKER REFRACTORIES CO.

Refractory Specialists



AMERICAN ARCH CO.
INCORPORATED
60 EAST 42nd STREET, NEW YORK, N. Y.
Locomotive Combustion Specialists

REVENUES AND EXPENSES OF RAILWAYS

MONTH OF JULY AND SEVEN MONTHS OF CALENDAR YEAR 1940—CONTINUED

Name of road		Av. mileage operated during period	Operating revenues: Freight	Passenger	Total (inc. misc.)	Operating expenses: Maintenance of: Way and structures	Equipment	Traffic	Transportation	Total	Operating ratio	Net from railway operation	Operating income	Net railway operating income: 1940	1939
Chicago, Milwaukee, St. Paul & Pacific	July	10,882	$7,723,126	$774,294	$9,454,961	$2,137,475	$1,705,010	$246,807	$3,375,855	$7,828,876	82.8	$1,626,085	$890,085	$482,791	$104,567
	7 mos.	10,883	51,051,128	4,337,407	61,487,224	10,779,527	11,864,195	1,614,008	23,400,430	50,216,145	81.7	11,271,079	6,298,079	3,506,266	213,387
Chicago, Rock Island & Pacific	July	7,909	6,908,830	746,339	8,250,260	1,346,749	1,222,518	264,021	2,534,266	5,620,180	68.1	2,630,080	2,142,395	1,651,359	1,283,533
	7 mos.	7,891	36,974,719	4,571,499	45,593,518	6,362,153	8,464,454	1,813,668	17,405,616	36,131,019	79.2	9,462,499	6,052,005	3,196,476	2,146,387
Chicago, St. Paul, Minneapolis & Omaha	July	1,629	1,296,222	155,402	1,554,100	281,486	262,615	39,354	658,951	1,309,366	84.3	244,734	125,335	13,793	—115,123
	7 mos.	1,629	8,041,765	886,651	9,577,035	1,418,424	1,784,184	275,796	4,564,218	8,514,118	88.9	1,062,917	262,650	—505,559	—850,362
Clinchfield Railroad	July	308	641,041	4,384	651,019	55,247	130,229	18,550	115,831	337,197	51.8	313,822	222,988	255,399	238,268
	7 mos.	308	5,010,350	25,219	5,074,567	316,600	848,725	135,592	929,733	2,342,091	46.2	2,732,476	2,094,698	2,222,535	1,623,334
Colorado & Southern	July	786	441,103	38,999	527,379	198,121	107,452	13,522	201,389	549,075	104.1	—21,696	—102,106	—128,904	63,973
	7 mos.	786	3,013,006	204,523	3,558,243	688,957	725,859	98,975	1,446,924	3,151,241	88.6	407,002	—57,733	—189,557	79,567
Fort Worth & Denver City	July	902	634,179	63,358	684,756	59,935	61,846	19,019	167,906	340,226	49.7	344,530	307,302	270,458	276,926
	7 mos.	902	3,168,699	333,673	3,447,102	419,115	553,574	134,981	1,182,259	2,500,764	72.5	946,338	682,090	455,361	375,729
Columbus & Greenville	July	168	73,241	3,820	81,647	12,179	13,760	4,241	33,468	74,610	91.4	7,037	609	3,079	12,898
	7 mos.	168	590,713	31,174	660,736	106,321	100,655	30,601	249,140	579,223	87.7	81,513	6,412	12,353	114,288
Delaware & Hudson	July	846	2,160,994	90,639	2,343,971	253,389	419,027	45,573	789,109	1,593,703	68.0	750,268	595,237	556,410	323,202
	7 mos.	846	13,982,371	533,735	15,167,263	1,677,902	2,810,699	306,356	5,517,720	10,904,226	71.9	4,263,037	3,184,491	2,993,580	2,661,576
Delaware, Lackawanna & Western	July	995	3,110,591	567,691	4,134,081	408,929	877,328	112,286	1,812,158	3,355,212	81.2	778,869	325,869	312,145	109,438
	7 mos.	995	23,130,931	3,681,808	29,886,500	2,140,310	5,791,104	786,003	13,541,258	23,306,570	78.0	6,579,930	3,481,630	3,168,386	2,516,111
Denver & Rio Grande Western	July	2,554	1,758,255	209,891	2,075,128	303,830	507,995	79,065	749,342	1,734,780	83.6	340,348	146,243	46,237	—21,513
	7 mos.	2,554	11,815,011	822,868	13,344,005	2,010,610	3,515,321	543,366	4,933,879	11,563,202	86.7	1,780,803	335,121	—77,411	—504,608
Denver & Salt Lake	July	232	78,629	6,688	93,686	20,679	48,795	2,764	44,548	124,050	132.8	—30,364	—55,074	—3,510	6,796
	7 mos.	232	1,021,351	41,224	1,122,932	149,876	311,630	18,968	386,621	933,319	83.1	189,613	15,308	349,137	187,362
Detroit & Mackinac	July	242	78,032	2,384	87,679	14,568	12,229	833	25,723	52,920	60.4	34,759	31,166	25,133	7,606
	7 mos.	242	361,481	14,760	425,039	79,944	81,877	6,452	165,439	352,524	82.9	72,515	47,925	24,505	16,406
Detroit & Toledo Shore Line	July	50	229,274	.....	230,346	27,078	23,830	8,824	68,662	135,662	58.9	94,684	68,287	26,458	16,916
	7 mos.	50	2,153,818	.....	2,162,919	181,707	165,678	61,060	568,526	1,029,388	47.6	1,133,531	865,083	499,810	207,548
Detroit, Toledo & Ironton	July	472	412,262	215	432,311	50,177	89,757	11,947	120,927	293,748	67.9	138,563	86,830	73,882	118,921
	7 mos.	472	4,268,941	1,518	4,388,799	458,321	609,538	85,301	1,014,663	2,311,003	52.7	2,077,796	1,537,175	1,393,854	1,047,815
Duluth, Missabe & Iron Range	July	541	3,660,610	1,599	4,254,985	199,902	229,740	4,363	573,810	1,058,420	24.9	3,196,565	2,703,888	2,706,316	1,655,275
	7 mos.	541	10,352,062	11,047	12,066,790	1,139,532	1,577,170	30,194	2,189,785	5,171,949	42.9	6,894,841	4,459,249	4,462,325	1,727,359
Duluth, Winnipeg & Pacific	July	175	105,802	963	110,446	28,637	18,190	2,198	46,055	98,094	88.8	12,352	2,970	—9,099	642
	7 mos.	175	795,590	7,299	824,713	160,917	141,004	14,997	330,148	670,307	81.3	154,406	87,649	—18,419	—81,065
Elgin, Joliet & Eastern	July	390	1,549,415	.....	1,867,954	153,533	282,403	15,286	650,305	1,142,852	61.2	725,102	515,910	424,019	48,445
	7 mos.	390	9,720,072	71	11,470,616	942,842	2,044,101	104,495	4,353,871	7,699,625	67.1	3,770,991	2,810,127	2,224,621	1,007,158
Erie	July	2,268	6,309,169	413,636	7,199,692	775,715	1,294,052	180,423	2,697,963	5,221,757	72.5	1,977,935	1,397,800	1,070,502	568,700
	7 mos.	2,268	41,159,875	2,630,650	47,013,333	4,185,056	9,163,154	1,250,987	18,300,779	34,765,820	73.9	12,247,513	8,246,305	6,208,612	4,768,392
Florida East Coast	July	685	341,321	116,624	512,384	141,108	176,306	24,571	246,702	638,322	124.6	—125,938	—194,720	—227,884	—202,419
	7 mos.	685	3,875,467	2,327,002	6,930,188	828,067	1,132,571	205,081	2,391,316	5,057,055	73.0	1,873,133	1,361,125	914,518	885,585
Georgia Railroad	July	329	287,178	15,318	323,841	27,501	57,710	18,307	148,806	265,870	82.1	57,971	43,233	51,030	54,708
	7 mos.	329	1,962,248	90,283	2,217,122	246,563	386,071	126,517	984,494	1,839,958	83.0	377,164	272,864	317,966	304,933
Georgia & Florida	July	408	79,375	1,610	84,237	20,889	18,663	8,332	35,655	88,903	105.5	—4,666	—12,900	—15,719	2,456
	7 mos.	408	585,197	9,492	619,305	153,392	115,645	59,944	256,939	623,124	100.6	—3,819	—61,447	—86,336	—70,036
Grand Trunk Western	July	1,029	1,519,761	91,008	1,722,070	284,182	388,375	42,025	709,958	1,506,500	87.5	215,570	108,983	12,610	—32,981
	7 mos.	1,029	12,664,509	515,175	14,085,964	1,779,861	2,718,607	287,323	5,544,641	10,834,263	76.9	3,251,701	2,402,120	1,807,501	450,477
Canadian National Lines in New England	July	172	113,721	4,060	126,904	79,080	20,218	1,419	64,580	169,518	133.6	—42,614	—58,709	—96,809	—45,175
	7 mos.	172	853,186	23,966	970,385	309,366	184,356	10,324	463,721	1,013,309	104.4	—42,924	—155,588	—437,800	—398,909
Great Northern	July	8,069	8,213,218	478,335	9,570,347	1,495,533	1,492,225	185,604	2,550,048	5,983,258	62.5	3,587,089	2,464,369	2,344,237	1,565,578
	7 mos.	8,069	44,195,217	2,371,776	50,965,819	6,856,066	9,350,414	1,409,040	16,032,260	35,331,246	69.3	15,634,573	9,850,018	8,993,946	5,301,063
Green Bay & Western	July	234	135,086	496	143,272	25,990	15,646	7,093	46,426	99,889	69.7	43,383	29,127	21,113	6,795
	7 mos.	234	923,632	2,105	962,951	181,829	115,760	49,576	329,195	711,303	73.8	251,648	152,208	118,750	119,092
Gulf & Ship Island	July	259	58,200	4,491	69,897	23,509	17,191	2,245	44,706	90,936	130.1	—21,039	—36,802	—45,825	—35,046
	7 mos.	259	589,810	25,149	680,360	153,043	111,856	17,650	344,008	654,434	96.2	25,926	—86,357	—147,731	—139,783
Gulf, Mobile & Northern	July	827	461,719	19,282	503,434	89,362	85,195	40,830	150,644	407,529	81.0	95,905	45,905	12,807	72,799
	7 mos.	827	3,595,938	116,596	3,878,089	549,503	601,095	286,419	1,075,103	2,764,441	71.3	1,113,648	763,648	500,069	576,779

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The decision as to the correct type of superheater determines the operating efficiency of your locomotive. The 30 years of experience that the Superheater Company has had in designing the correct superheater to fit individual operating conditions and locomotives, qualifies them to specify the correct superheater to suit *your* needs. Consult us.

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Representative of
AMERICAN THROTTLE COMPANY, INC.
60 East 42nd Street, NEW YORK
122 S. Michigan Ave. CHICAGO
• • •
Montreal, Canada
THE SUPERHEATER COMPANY, LTD.

REVENUES AND EXPENSES OF RAILWAYS

MONTH OF JULY AND SEVEN MONTHS OF CALENDAR YEAR 1940—CONTINUED

Name of road		Av. mileage operated during period	Operating revenues: Freight	Passenger	Total (inc. misc.)	Operating expenses: Maintenance of Way and structures	Maintenance of Equipment	Traffic	Transportation	Total	Operating ratio	Net from railway operation	Operating income	Net railway operating income 1940	1939
Illinois Central	July	4,949	$6,290,994	$726,101	$7,574,187	$1,004,427	$1,899,795	$191,078	$2,828,694	$6,252,888	82.6	$1,321,299	$635,824	$628,278	$990,684
	7 mos.	4,949	45,520,951	5,136,995	55,063,284	6,039,490	12,766,325	1,417,673	21,306,589	43,891,215	79.7	11,720,069	6,214,075	5,755,227	6,258,465
Yazoo & Mississippi Valley	July	1,608	865,193	60,580	985,514	127,916	219,834	29,984	465,486	890,263	90.3	95,251	—43,198	—114,485	14,205
	7 mos.	1,609	7,378,334	384,077	8,272,811	835,625	1,366,195	221,077	3,409,992	6,161,237	74.5	2,111,574	1,130,639	615,297	520,318
Illinois Central System	July	6,557	7,156,187	786,681	8,559,701	1,132,343	2,119,629	221,062	3,294,180	7,143,151	83.5	1,416,550	590,368	523,706	1,012,802
	7 mos.	6,558	52,899,285	5,521,072	63,336,095	6,875,115	14,132,520	1,638,750	24,716,581	50,052,452	79.0	13,283,643	7,330,630	6,433,915	6,841,673
Illinois Terminal	July	477	408,140	58,934	519,985	67,881	73,522	18,287	165,744	344,030	66.16	175,955	124,698	98,352	83,029
	7 mos.	478	2,725,275	419,965	3,450,119	382,095	503,450	120,689	1,185,889	2,319,032	67.22	1,131,087	794,199	633,850	521,284
Kansas City Southern	July	879	981,271	46,432	1,140,657	105,009	169,838	54,295	337,727	724,843	63.6	415,814	312,814	247,630	260,747
	7 mos.	879	7,047,011	212,622	8,038,307	710,341	1,131,726	386,572	2,390,628	5,024,669	62.5	3,013,638	2,302,638	1,889,008	1,676,600
Kansas, Oklahoma & Gulf	July	328	166,211	403	169,092	21,243	16,150	8,685	38,180	87,983	52.0	81,109	53,063	35,647	86,011
	7 mos.	328	1,261,181	2,685	1,283,396	105,296	86,764	60,722	281,665	592,113	46.1	691,283	552,193	434,517	535,844
Lake Superior & Ishpeming	July	156	482,240	68	591,065	34,159	23,472	866	68,726	133,767	22.6	457,298	339,757	341,436	141,078
	7 mos.	156	1,400,607	369	1,692,440	188,693	184,099	4,491	272,619	696,910	41.2	995,530	635,682	640,229	156,426
Lehigh & Hudson River	July	96	133,138	.....	134,026	20,909	18,665	3,542	38,080	87,534	65.3	46,492	30,914	21,488	12,967
	7 mos.	96	922,985	.....	928,646	96,076	153,145	24,974	303,403	622,171	67.0	306,475	197,653	123,935	100,376
Lehigh & New England	July	190	398,291	.....	401,055	32,453	59,543	6,835	116,579	230,904	57.6	170,151	114,996	119,556	92,049
	7 mos.	190	2,493,421	.....	2,510,121	226,654	439,453	48,514	792,864	1,616,010	64.4	894,111	631,934	670,386	653,201
Lehigh Valley	July	1,269	3,485,083	175,138	3,870,467	297,952	644,537	107,444	1,570,513	2,751,909	71.1	1,118,558	807,944	604,611	154,737
	7 mos.	1,278	24,225,439	1,122,410	26,964,885	1,762,792	4,724,221	754,219	11,492,754	19,600,169	72.7	7,364,716	5,188,835	3,617,636	3,248,542
Louisiana & Arkansas	July	846	607,860	6,648	639,306	125,965	90,646	29,015	168,697	438,867	68.6	200,439	145,723	99,484	117,835
	7 mos.	846	4,387,856	50,753	4,618,510	764,154	646,053	204,957	1,255,370	3,054,857	66.1	1,563,653	1,177,631	863,203	694,892
Louisville & Nashville	July	4,871	7,132,070	566,540	8,141,094	887,849	2,033,917	176,145	2,656,409	6,016,895	73.9	2,124,199	1,266,051	1,378,576	1,346,470
	7 mos.	4,871	48,614,495	3,665,170	55,683,727	5,997,013	13,543,165	1,276,070	19,063,069	41,803,176	75.1	13,880,551	8,561,568	9,156,257	7,116,301
Maine Central	July	991	787,281	106,656	988,025	164,496	137,767	11,893	347,640	696,800	70.5	291,225	166,089	147,980	112,451
	7 mos.	991	6,080,233	512,579	7,228,000	1,065,771	1,236,627	76,192	2,558,481	5,174,071	71.6	2,053,929	1,459,711	1,208,692	1,072,333
Midland Valley	July	352	116,357	5	118,017	15,170	10,044	2,572	30,452	63,848	54.1	54,169	42,751	31,602	38,468
	7 mos.	352	735,940	39	748,700	96,906	71,774	18,379	215,836	443,936	59.3	304,764	225,209	166,277	200,404
Minneapolis & St. Louis	July	1,512	715,257	9,287	757,369	140,400	128,469	48,915	258,044	605,943	80.0	151,426	108,696	77,567	24,348
	7 mos.	1,512	4,722,476	42,055	4,998,597	794,474	904,107	349,268	1,857,690	4,136,581	82.8	862,016	547,813	296,286	201,119
Minneapolis, St. Paul & Sault Ste. Marie	July	4,271	2,371,906	122,352	2,714,598	436,426	373,715	65,950	998,161	1,978,169	72.9	736,429	540,827	439,047	174,936
	7 mos.	4,282	14,436,489	523,520	16,177,588	2,513,631	2,792,402	450,554	6,625,707	12,997,280	80.3	3,180,308	1,959,579	1,288,139	—244,927
Duluth, South Shore & Atlantic	July	550	260,530	8,802	294,296	76,875	36,233	6,197	92,301	218,110	74.1	76,186	60,467	56,365	8,938
	7 mos.	550	1,252,122	50,398	1,425,362	268,550	235,182	46,301	558,440	1,154,411	81.0	270,951	171,976	152,033	—119,839
Spokane International	July	152	67,638	562	74,590	11,964	7,073	2,150	21,579	46,986	63.0	27,604	22,258	18,071	9,434
	7 mos.	152	395,082	4,588	445,234	105,931	50,920	15,795	151,510	348,190	78.2	97,044	60,385	36,652	31,444
Mississippi Central	July	150	53,321	1,684	58,639	30,476	10,406	6,988	18,027	70,182	119.7	—11,543	—16,400	—21,432	—4,934
	7 mos.	150	409,675	12,526	439,529	136,819	72,339	49,578	138,231	429,550	97.7	9,979	—22,768	—54,304	—43,198
Missouri & Arkansas	July	365	77,255	1,393	84,182	20,764	10,347	6,913	29,300	71,937	85.5	12,245	8,155	34	—5,475
	7 mos.	365	595,529	9,485	653,539	159,338	72,686	48,739	212,646	526,695	80.6	126,844	96,551	37,587	20,403
Missouri-Illinois	July	193	203,715	350	206,759	25,085	20,806	2,926	48,120	102,873	49.8	103,886	71,039	56,899	52,424
	7 mos.	193	1,196,277	2,222	1,215,986	148,146	152,942	21,191	331,509	691,792	56.9	524,194	388,684	307,085	305,126
Missouri-Kansas-Texas Lines	July	3,293	2,345,011	159,754	2,724,762	311,721	400,394	105,039	903,119	1,837,972	67.5	886,790	630,000	457,020	461,395
	7 mos.	3,293	13,125,638	1,109,691	15,760,919	1,972,121	2,602,326	736,764	6,200,795	12,370,628	78.5	3,390,291	2,128,260	858,463	636,432
Missouri Pacific	July	7,146	6,957,687	470,191	8,070,842	1,282,061	1,423,813	239,880	2,666,380	5,881,760	72.9	2,189,082	1,675,745	1,313,869	1,004,566
	7 mos.	7,147	40,636,780	2,961,012	48,113,812	7,056,709	9,501,002	1,695,845	18,150,379	38,298,527	79.6	9,815,285	6,328,995	4,009,928	2,676,852
Gulf Coast Lines	July	1,757	865,418	38,496	960,355	193,497	174,283	44,293	359,875	823,429	85.74	136,926	58,863	19,273	15,581
	7 mos.	1,759	8,276,855	244,774	8,967,228	1,412,118	1,297,326	315,283	2,741,655	6,133,886	68.40	2,833,342	2,277,468	1,607,813	1,919,706
International Great Northern	July	1,155	677,162	82,595	857,819	160,500	170,741	29,492	382,479	793,010	92.4	64,809	2,675	—48,145	5,432
	7 mos.	1,155	5,131,547	545,322	6,440,735	1,105,350	1,286,010	210,855	2,857,548	5,835,302	90.6	605,433	159,790	—284,826	—282,200
Mobile & Ohio	July	1,181	823,826	25,494	891,280	205,009	176,943	47,539	423,426	885,731	99.4	5,549	—66,991	—144,615	44,271
	7 mos.	1,181	6,063,241	161,865	6,547,751	1,186,402	1,278,240	307,112	2,463,236	5,562,460	85.0	985,291	544,331	6,406	343,474
Monongahela	July	172	429,904	611	432,324	37,648	34,559	506	85,894	160,967	37.2	271,357	215,231	134,507	103,613
	7 mos.	172	2,962,817	3,889	2,983,046	264,107	255,640	3,426	642,905	1,186,071	39.8	1,796,975	1,399,803	839,140	439,524

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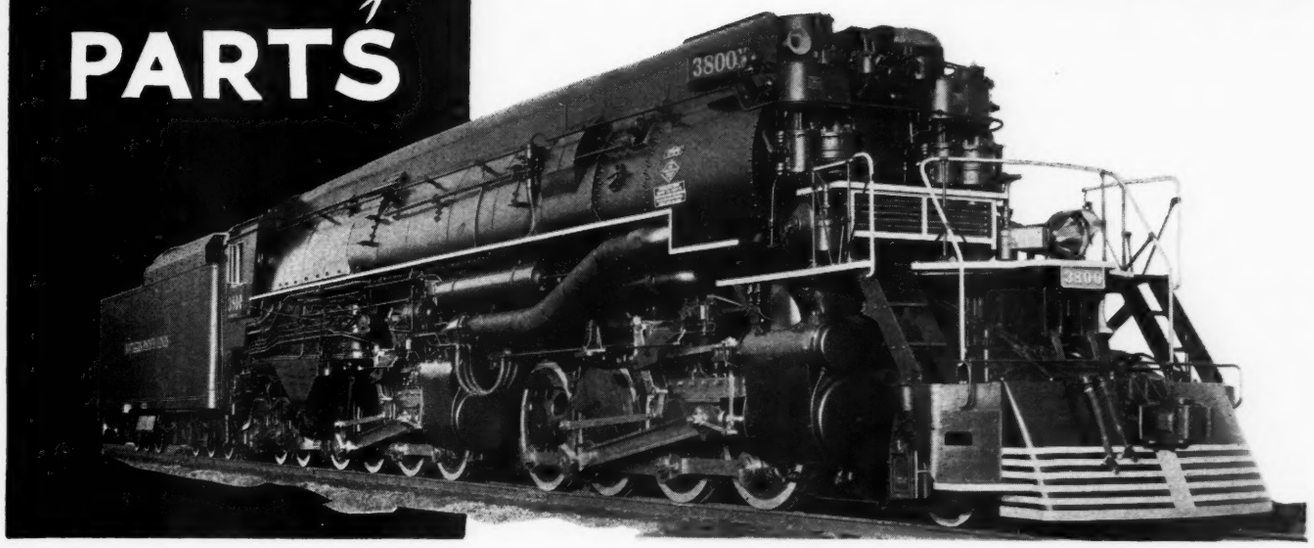
HSGI *Wear Resisting* PARTS

SAVE All Along the Line



THE economies effected by the use of HUNT-SPILLER *Air Furnace* GUN IRON can be found in the records kept in the offices of operating supervisors, purchasing agents, master mechanics, fuel supervisors, shop superintendents and roundhouse foremen.

These records show greater mileage between renewals, less fuel per ton mile, fewer items on work reports, increased efficiency, higher availability, lower machining costs and fewer requisitions for materials.

Every one of the H S G I parts listed below offers savings in the cost of locomotive operation. Complete standardization offers increased operating income.

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Crosshead Shoes
Hub Liners
Shoes and Wedges
Floating Rod Bushings

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for Cylinders and Valves
(Duplex Springs for Above
Sectional Packing)
Cylinder Snap Rings
Valve Rings All Shapes
Light Weight Valves
Cylinder Liners and Pistons
for Diesel Service

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HUNT-SPILLER *Air Furnace* GUN IRON

REVENUES AND EXPENSES OF RAILWAYS

MONTH OF JULY AND SEVEN MONTHS OF CALENDAR YEAR 1940—CONTINUED

Name of road		Av. mileage operated during period	Operating revenues: Freight	Passenger	Total (inc. misc.)	Operating expenses: Maintenance of Way and structures	Maintenance of Equipment	Traffic	Transportation	Total	Operating ratio	Net from railway operation	Operating income	Net railway operating income 1940	Net railway operating income 1939
Montour	July	51	$232,766	$.....	$234,977	$9,980	$56,590	$812	$46,154	$119,828	51.0	$115,149	$74,626	$102,940	$131,236
	7 mos.	51	1,237,606	17	1,249,665	90,243	314,330	6,209	305,215	761,244	60.9	488,421	306,237	499,078	381,878
Nashville, Chattanooga & St. Louis	July	1,111	1,093,584	79,585	1,294,223	159,468	236,966	63,708	498,040	1,013,329	78.3	280,894	195,862	174,125	143,467
	7 mos.	1,111	7,060,152	671,770	8,645,336	938,823	1,700,144	470,643	3,456,671	6,958,286	80.5	1,687,050	1,120,688	935,781	1,030,082
Nevada Northern	July	165	53,517	637	58,660	7,640	2,674	1,350	9,860	26,313	44.9	32,347	19,612	22,599	11,455
	7 mos.	165	377,290	5,446	414,183	52,859	17,849	8,694	70,304	184,388	44.5	229,795	138,441	155,185	116,332
New York Central	July	10,984	21,982,989	5,234,076	30,386,378	3,431,585	6,321,767	625,363	11,012,828	22,628,203	74.5	7,758,175	4,584,611	3,422,355	2,812,237
	7 mos.	10,989	149,734,354	33,546,018	205,753,810	21,879,212	43,361,928	3,959,722	79,753,679	157,764,826	76.7	47,988,984	27,334,515	19,047,288	11,502,190
Pittsburgh & Lake Erie	July	233	2,140,790	38,517	2,229,935	181,537	660,498	26,599	571,599	1,517,877	68.1	712,058	393,572	639,676	298,714
	7 mos.	233	12,131,799	279,128	12,792,797	1,062,086	4,598,368	195,801	3,868,799	10,272,696	80.3	2,520,101	1,008,868	2,662,826	946,722
New York, Chicago & St. Louis	July	1,704	3,491,828	75,635	3,681,207	428,853	610,317	120,190	1,281,267	2,564,787	69.7	1,116,420	877,285	583,810	472,050
	7 mos.	1,704	24,302,885	419,496	25,488,553	2,641,563	4,289,865	853,760	9,384,041	18,017,407	70.7	7,471,146	5,835,922	3,727,131	3,305,907
New York, New Haven & Hartford	July	1,864	4,156,703	2,181,133	6,993,645	1,135,234	1,137,713	124,473	2,647,929	5,413,800	77.4	1,579,845	1,044,845	401,655	219,937
	7 mos.	1,866	27,652,907	14,550,699	47,030,611	6,054,869	7,956,176	824,307	18,421,931	35,919,805	76.4	11,110,806	7,263,216	2,986,492	3,081,538
New York Connecting	July	21	185,597	.....	191,318	34,333	5,190	.....	10,992	51,815	27.1	139,503	95,455	104,349	75,643
	7 mos.	21	1,345,257	.....	1,415,851	217,220	41,080	.....	161,952	429,753	30.4	986,098	682,023	728,504	729,120
New York, Ontario & Western	July	576	427,386	98,273	573,813	63,122	106,937	12,939	259,502	462,471	80.6	111,342	62,093	22,654	—60,688
	7 mos.	576	2,677,441	146,783	3,138,154	377,010	751,301	116,240	1,682,999	3,064,005	97.6	74,149	—259,810	—478,558	—197,315
New York, Susquehanna & Western	July	144	242,219	24,002	276,189	25,632	19,364	3,695	108,571	167,817	60.8	108,372	81,895	47,970	—17,394
	7 mos.	144	1,640,264	131,813	1,851,663	138,138	181,208	16,053	742,738	1,157,760	62.5	693,903	485,484	295,083	136,649
Norfolk & Western	July	2,191	8,752,577	189,868	9,145,349	933,016	1,658,169	146,611	1,811,512	4,743,397	51.9	4,401,952	2,589,594	2,889,419	2,863,153
	7 mos.	2,191	56,794,133	1,111,093	59,465,795	6,047,389	11,835,709	1,021,100	12,653,090	32,884,450	55.3	26,581,345	17,243,263	19,255,069	12,095,282
Norfolk Southern	July	805	368,836	6,806	387,584	68,254	52,246	23,598	144,911	311,304	80.3	76,280	43,336	26,486	20,343
	7 mos.	805	2,440,310	24,080	2,562,119	499,605	372,487	173,680	972,672	2,168,623	84.6	393,496	162,512	34,982	159,726
Northern Pacific	July	6,720	4,697,656	453,989	5,661,398	870,105	1,239,568	173,193	1,995,175	4,573,364	80.8	1,088,034	479,607	744,462	482,720
	7 mos.	6,720	31,091,681	2,142,883	36,285,348	5,045,656	7,772,079	1,197,533	13,199,245	29,097,629	80.2	7,187,719	3,173,881	5,146,540	2,176,131
Northwestern Pacific	July	352	224,988	51,432	306,652	63,614	48,136	3,438	149,100	274,865	89.6	31,787	11,561	—3,045	10,272
	7 mos.	352	1,279,422	306,201	1,757,608	476,902	343,401	22,895	975,341	1,891,079	107.6	—133,471	—273,411	—352,801	—273,661
Oklahoma City-Ada-Atoka	July	132	23,294	317	25,242	3,859	861	742	10,399	17,490	69.3	7,752	5,428	1,115	—2,131
	7 mos.	132	152,109	1,856	166,285	31,070	10,499	5,250	74,007	132,170	79.5	34,115	17,648	—11,122	27,679
Pennsylvania	July	10,253	31,577,014	5,914,460	40,968,804	4,356,610	8,708,626	780,609	13,865,283	28,959,214	70.7	12,009,590	7,644,725	6,571,361	5,517,041
	7 mos.	10,268	198,672,924	39,968,081	261,740,768	25,757,073	53,477,005	5,174,887	94,608,942	187,804,057	71.8	73,936,711	46,591,744	40,520,735	32,328,042
Long Island	July	379	598,500	1,745,176	2,430,570	227,369	332,242	18,267	995,716	1,608,179	66.2	822,391	331,766	65,357	333,210
	7 mos.	379	4,134,358	9,167,081	13,905,115	1,469,689	2,484,852	87,712	6,651,322	10,970,110	78.9	2,935,005	788,107	—511,559	29,022
Pennsylvania-Reading Seashore Lines	July	411	272,384	469,655	769,981	84,273	85,592	9,360	365,584	562,363	73.0	207,618	87,238	—56,430	—70,996
	7 mos.	411	1,919,336	1,179,930	3,245,516	590,567	602,453	53,491	2,033,173	3,393,790	104.6	—148,274	—727,644	—1,325,475	—1,343,308
Pere Marquette	July	2,114	2,138,582	117,265	2,439,595	397,122	509,311	67,325	935,966	2,013,496	82.5	426,099	229,833	89,274	29,808
	7 mos.	2,114	16,865,648	533,790	18,373,800	2,454,606	3,854,011	458,313	6,966,377	14,416,061	78.5	3,957,739	2,663,476	1,799,211	850,575
Pittsburg & Shawmut	July	98	134,040	.....	134,277	17,008	20,033	1,929	29,158	72,293	53.8	61,984	56,356	48,561	—7,581
	7 mos.	98	726,601	.....	728,679	94,107	140,116	13,175	180,369	464,342	63.7	264,337	239,387	179,456	—29,746
Pittsburgh & West Virginia	July	136	312,584	50	327,688	68,810	78,735	17,155	78,704	265,580	81.0	62,108	36,163	38,045	89,917
	7 mos.	136	2,267,106	378	2,373,562	412,782	518,132	120,862	536,281	1,750,553	73.8	623,009	450,266	493,013	331,998
Pittsburg, Shawmut & Northern	July	190	88,792	.....	89,385	17,713	19,300	1,038	27,624	70,333	78.7	19,052	13,931	7,584	—3,830
	7 mos.	190	687,478	28	692,373	100,003	118,772	7,505	223,487	488,153	70.5	204,220	167,539	106,013	21,277
Reading	July	1,449	4,806,977	240,442	5,278,984	436,584	1,078,126	70,310	1,872,127	3,604,899	68.3	1,674,085	1,148,920	1,142,302	808,219
	7 mos.	1,450	31,751,630	1,786,485	35,180,461	2,754,049	6,906,011	493,911	13,517,554	24,698,952	70.2	10,481,509	7,398,283	7,025,424	5,822,074
Richmond, Fredericksburg & Potomac	July	118	400,216	189,551	667,424	96,842	128,240	9,556	260,135	532,319	79.8	135,105	77,844	41,450	78,082
	7 mos.	118	2,966,312	1,914,157	5,692,257	659,697	986,261	68,695	2,158,388	4,228,305	74.3	1,463,952	1,023,380	517,555	544,525
Rutland	July	407	223,113	26,359	341,141	36,711	58,152	10,660	154,193	271,375	79.5	69,766	46,598	41,419	6,581
	7 mos.	407	1,406,910	171,592	2,014,453	252,975	427,020	76,577	1,076,038	1,912,595	94.9	101,858	—55,339	—65,959	—95,224
St. Louis-San Francisco	July	4,814	3,387,053	259,455	3,958,590	524,596	861,051	113,655	1,394,353	3,068,564	77.5	890,026	565,707	598,571	363,190
	7 mos.	4,816	21,494,438	1,783,182	25,532,127	3,652,062	5,973,737	834,923	10,103,131	21,818,142	85.5	3,713,985	1,463,503	1,534,099	813,040
St. Louis, San Francisco & Texas	July	159	137,706	609	143,319	21,742	12,673	6,743	50,897	97,134	67.8	46,185	37,840	13,691	60,470
	7 mos.	186	764,369	2,876	799,792	157,369	95,048	54,468	355,974	700,612	87.6	99,180	41,961	—132,074	—16,336

Continued on next left-hand page

Unique in Tone Quality

Powerful in Sound Capacity

Reliable in Performance

Economical in Use of Air

THE "Pneuphonic" HORN

Type E-2

A deep, clear tone, easily distinguished from signals of motor highway vehicles, gives unmistakable warning of approach. Its vigorous, commanding call for the right-of-way is a pleasing note, distinctly audible above competing noises. Trust-worthy performance is assured by rugged construction — vibrating unit a sturdy laminated diaphragm; bell and supporting bracket substantial castings. The air consumption is very much less than with any other known horn of equal tone, volume, and sound-carrying capacity. » » »

WILMERDING :-: :-: :-: PENNSYLVANIA

REVENUES AND EXPENSES OF RAILWAYS

MONTH OF JULY AND SEVEN MONTHS OF CALENDAR YEAR 1940—CONTINUED

Name of road		Av. mileage operated during period	Operating revenues: Freight	Passenger	Total (inc. misc.)	Operating expenses: Maintenance of Way and structures	Maintenance of Equipment	Traffic	Transportation	Total	Operating ratio	Net from railway operation	Operating income	Net railway operating income 1940	Net railway operating income 1939
St. Louis Southwestern Lines	July	1,649	$1,385,576	$29,786	$1,483,338	$274,179	$179,191	$82,815	$485,469	$1,096,810	73.9	$386,528	$276,960	$114,356	$—97,302
	7 mos.	1,666	10,800,920	170,318	11,424,852	1,782,217	1,732,640	585,826	3,583,996	8,251,418	72.2	3,173,434	2,396,223	1,409,902	266,466
Seaboard Air Line	July	4,314	2,594,661	423,923	3,285,957	573,532	796,564	164,386	1,338,696	3,063,014	93.2	222,943	—7,057	—15,934	—9,098
	7 mos.	4,314	20,814,303	4,872,062	28,149,028	4,084,138	5,486,389	1,247,309	10,596,922	22,990,953	81.7	5,158,075	3,008,075	2,162,699	1,663,530
Southern Railway	July	6,594	7,002,365	799,971	8,362,668	1,155,873	1,449,734	163,596	2,881,064	5,977,036	71.5	2,385,632	1,670,984	1,437,398	1,461,055
	7 mos.	6,598	48,638,275	5,002,478	58,150,634	7,680,269	10,156,225	1,151,322	20,314,773	41,622,154	71.6	16,528,480	11,698,251	9,916,902	9,137,472
Alabama Great Southern	July	315	570,342	50,357	658,887	85,298	139,517	14,361	187,021	448,891	68.1	209,996	125,290	119,904	144,583
	7 mos.	315	3,846,237	319,703	4,454,243	615,802	940,212	91,670	1,309,904	3,121,851	70.1	1,332,392	809,482	824,609	885,174
Cincinnati, New Orleans & Texas Pacific	July	337	1,335,026	94,021	1,504,491	182,210	274,164	29,182	390,881	927,525	61.7	576,966	376,009	369,172	452,706
	7 mos.	337	9,183,116	722,880	10,490,922	1,225,955	2,003,768	209,259	2,726,778	6,554,192	62.5	3,936,730	2,723,976	2,798,730	2,769,400
Georgia Southern & Florida	July	398	159,139	26,526	200,376	38,280	36,544	1,787	81,674	165,721	82.7	34,655	18,660	6,491	—18,060
	7 mos.	398	1,023,549	320,658	1,480,876	258,260	258,904	12,971	619,241	1,211,341	81.8	269,535	156,918	78,605	51,995
New Orleans & Northeastern	July	204	212,730	16,852	243,733	37,241	37,176	5,874	77,237	169,713	69.6	74,020	44,035	17,801	41,823
	7 mos.	204	1,547,511	107,055	1,777,459	255,158	248,409	40,006	544,521	1,175,804	66.2	601,655	385,047	224,699	203,417
Southern Pacific	July	8,623	11,592,369	2,114,927	14,895,591	1,453,625	2,665,196	380,879	5,461,686	10,836,728	72.8	4,058,863	2,815,753	1,915,905	2,253,480
	7 mos.	8,637	75,835,251	11,200,354	94,783,524	1,248,522	17,435,467	2,631,523	35,695,962	71,764,235	75.7	23,019,289	14,602,290	9,163,917	9,405,825
Southern Pacific Steamship Lines	July	.....	706,071	52,705	798,283	16,765	122,873	16,441	573,527	743,327	93.1	54,956	27,451	27,091	711
	7 mos.	.....	4,843,366	221,745	5,330,808	118,705	755,827	129,272	3,822,286	4,925,377	92.4	405,431	235,146	227,818	181,442
Texas & New Orleans	July	4,417	2,799,238	309,925	3,399,412	617,302	654,836	119,671	1,257,609	2,855,109	84.0	544,305	230,150	33,262	99,673
	7 mos.	4,417	21,261,208	1,983,891	25,270,963	4,010,678	4,492,728	875,743	8,779,492	19,593,131	77.5	5,677,832	3,479,846	1,757,382	1,862,190
Spokane, Portland & Seattle	July	948	693,220	47,316	827,202	265,175	83,375	13,189	278,470	671,566	81.2	155,636	77,347	17,514	114,900
	7 mos.	948	4,425,786	215,956	5,051,726	1,215,354	598,596	75,646	1,812,743	3,903,394	77.3	1,148,332	623,514	274,643	278,147
Tennessee Central	July	286	189,146	5,326	207,097	40,798	33,656	7,384	69,103	160,741	77.6	46,356	33,594	20,389	18,333
	7 mos.	286	1,384,761	35,451	1,511,797	274,206	237,010	48,837	517,866	1,147,873	75.9	363,924	268,951	166,380	72,610
Texas & Pacific	July	1,887	1,683,329	212,018	2,069,384	237,545	392,499	77,518	683,106	1,504,384	72.7	565,000	421,951	293,911	306,533
	7 mos.	1,915	12,402,410	1,274,668	14,995,380	1,759,816	2,766,532	526,866	4,851,331	10,711,113	71.4	4,284,267	3,211,053	2,491,705	2,059,181
Texas Mexican	July	162	46,713	187	59,645	11,448	9,896	3,243	33,899	64,031	107.4	—4,386	—10,283	—12,311	—6,277
	7 mos.	162	392,674	2,457	488,656	78,178	67,399	21,668	210,968	418,928	85.7	69,728	28,726	6,252	59,322
Toledo, Peoria & Western	July	239	202,124	8	205,966	44,995	16,256	19,040	50,013	149,626	72.6	56,340	38,891	25,633	28,276
	7 mos.	239	1,316,116	54	1,336,337	296,488	103,498	122,564	310,666	923,112	69.1	413,225	279,625	172,884	147,124
Union Pacific System	July	9,889	11,428,305	1,946,742	14,542,873	1,913,932	2,983,916	430,741	4,828,759	10,955,984	75.3	3,586,889	2,343,769	1,542,329	1,217,336
	7 mos.	9,892	70,366,897	9,621,162	87,697,786	9,124,657	18,031,064	3,039,378	30,962,128	66,245,331	75.5	21,452,455	12,374,313	7,838,849	5,708,243
Utah	July	111	51,008	.....	51,036	9,146	23,647	595	12,816	50,410	98.8	626	—6,769	—271	—6,755
	7 mos.	111	420,364	.....	421,144	57,679	159,120	2,971	118,638	368,639	87.5	52,505	—5,093	17,809	—2,106
Virginian	July	639	2,052,710	4,865	2,102,590	174,458	380,449	25,728	287,993	900,483	42.8	1,202,107	802,107	872,464	759,636
	7 mos	639	14,128,485	19,870	14,489,717	1,195,052	2,738,801	176,300	2,088,592	6,415,578	44.3	8,074,139	5,824,139	6,176,563	4,182,999
Wabash	July	2,409	3,334,731	221,450	3,806,936	551,050	621,664	149,850	1,465,192	2,944,479	77.3	862,457	626,883	255,965	294,985
	7 mos.	2,409	22,429,150	1,365,279	25,683,458	3,492,404	4,335,065	1,040,900	10,421,447	20,400,646	79.4	5,282,812	3,659,953	1,274,511	803,475
Ann Arbor	July	294	327,133	2,672	349,855	35,460	70,865	15,169	144,111	277,871	79.4	71,984	47,292	30,881	54,515
	7 mos.	294	2,248,876	14,205	2,335,504	232,966	500,079	96,525	1,026,792	1,941,404	83.1	394,100	232,250	140,067	76,321
Western Maryland	July	859	1,469,065	11,093	1,522,847	215,181	334,687	37,946	377,959	1,015,308	66.7	507,539	392,539	396,007	330,854
	7 mos	859	10,180,156	45,186	10,606,332	1,319,606	2,281,183	275,315	2,777,802	7,000,176	66.0	3,606,156	2,826,156	2,851,573	2,012,103
Western Pacific	July	1,208	1,355,775	101,682	1,486,997	272,728	215,833	66,942	542,439	1,155,115	77.7	331,882	242,172	137,412	39,952
	7 mos.	1,208	8,714,529	320,857	9,234,626	1,674,903	1,497,652	438,390	3,611,709	7,617,493	82.5	1,617,133	1,012,748	443,399	—108,870
Wheeling & Lake Erie	July	507	1,517,374	.....	1,617,474	213,743	282,211	36,378	455,180	1,021,246	63.1	596,228	377,275	476,517	333,312
	7 mos.	508	9,072,351	20	9,510,040	1,071,066	1,831,629	255,649	2,800,883	6,188,121	65.1	3,321,919	2,035,451	2,612,256	1,588,565